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COURSE OF LECTURES
ON THE
PHYSIOLOGY AND PATHOLOGY OF THE BLOOD,
AND
THE OTHER ANIMAL FLUIDS,
DELIVERED IN THE SESSION OF 1839-40,
AT THE
School of Anatomy adjoining St. George's Hospital,

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LECTURE VII.

The coagulation of blood (continued).—Action of various substances on extravasated blood.—Substances which suspend, hasten, prevent, interfere with, coagulation.—Effects of a vacuum, electricity, galvanism.—Dr. Wilson's description of blood, as a "self-coagulating" material of life.—Coagulability coincides with the vital conditions of the system.—Period at which this process commences.—Rapid coagulation; in weak animals, in the young, in the last flowing blood in hæmorrhage, in debility.—Slow coagulation; in strong animals, in inflammatory and febrile states.—Cause of the rapid coagulation of the blood last flowing.—An improvement in the trial bleedings of Dr. Marshall Hall suggested.—The contraction of the clot, and the separation of serum.

GENTLEMEN:—Although the subjects of the present part of the course may be somewhat irksome, you will find, I am persuaded, as I proceed, that they are not unprofitable. My intention is to lay before you their practical application much more fully in the sequel; but, in order to do so with advantage, it is necessary to proceed cautiously, methodically, and minutely. I have already explained what is known respecting the ordinary influences exerted over the spontaneous changes of extravasated blood; I shall, in the next place, detail the effects of extraordinary influences on the same process as determined by experiment.

Innumerable experiments have been made on blood, to ascertain the effects of various agents on these changes, and, coagulation being a vital process, it is by no means surprising that they should have been instituted with a view to the analogy which may be supposed to subsist between their action on the vital fluid, before and immediately after its separation from the living system. With respect to the materia medica, poisons, and food, this is, doubtless, a most interesting inquiry; but I have already cautioned you against placing too much reliance upon the analogy in question, by reminding you, that the vital conditions of the blood undergo changes from the first moment of its escape from the living body. I shall place the facts before you in a table, made as comprehensive as possible for the convenience of future reference. Haller, Hewson, Davy, and Thackrah, who have laboured more or less on this part of the subject, all agree that these facts are not applicable to medicine in the present state of our knowledge. Some of our less cautious continental neighbours have taken a different view of the case. Magendie asserts, *positively*, that many agents, when injected into the veins of living animals, produce precisely the same effects on the blood therein as on that which is abstracted, and that the same agents may be taken into the system by the various channels of absorption, and produce similar effects. However this may turn out, a record of the facts, so far as they can be determined, is necessary in a history of the blood, but very great difficulties attend their collection. Although this subject has been investigated by few individuals, the results are so multifarious, and so contradictory, that the facts bid defiance to every arrangement. The circumstance, that substances, possessed of chemical and other inorganic powers, are brought to act on a fluid, possessed wholly or in part of vital power, the latter being excited, overwhelmed or modified by the former, and (regarding the blood as dead), its complex chemical composition account for this circumstance. It appears, at all events, that various agents, and particularly the materia medica, may *retard, hasten, suspend,* or *destroy* coagula-

bility; may render the blood *thicker* or *thinner*; may dissolve the corpuscles, or may *darken*, *brighten*, or otherwise *modify* their *colour*; or may *consolidate the albumen* and produce other effects of *chemical decomposition*, which destroy and supersede every vital phenomenon. In examining these effects, every effort to determine what really has taken place is frequently baffled, experimentalists having described them very cursorily, and sometimes inaccurately, owing, most likely, to the little importance which has at all times attached to the inquiry. The distinction between *coagulation* and *consolidation* is, no doubt, correctly drawn. The former is the result of the inherent vital tendency of blood, the latter of chemical decomposition. The addition of various substances renders the albumen solid, but this is not coagulation properly so called. Lime consolidates the blood chemically, carbonate of lime does not, but it acts on its vital properties, and, according to Mr. Prater, accelerates coagulation. Many similar cases will be seen in Table XV.

Another circumstance, of paramount importance, as stated by Mr. Prater, is *quantity*. If published experiments are to be depended upon, chloride of sodium, or hydrochlorate of ammonia, and many other substances, particularly medicines, will either *hasten*, *retard*, or altogether *prevent* coagulation, according to the quantity which is employed, and these facts have induced him to call them *sedatives* and *stimulants*, in reference to extravasated blood; but it is much better to avoid these terms, as calculated to prejudice the mind, and lead us into theoretical speculations. The remarkable circumstance, that neutral salts suspend coagulation, and that this process takes place on dilution, has been too much overlooked—many other substances have the same property,—but it is observed, by Prater, that whenever these destroy the colour of the blood, it cannot then be made to coagulate on dilution. Mr. Prater thinks all substances, by virtue of *mere contact*, are capable of hastening this process; and it is a curious remark of Dr. Davy, that when spontaneous coagulation is prevented by a foreign admixture, the blood remains *viscid*, without any sign of decomposition for days, or even weeks, and, on the addition of water it will then coagulate and putrify. It is necessary, in estimating these effects, to take into consideration *mechanical* causes, since coagulation may be prevented by the particles of the liquor sanguinis being too far separated from each other. It is important also to observe, that no two substances produce precisely the same effect. In the attempt at classification, in Table XV., I have chiefly followed Dr. Davy and Mr. Prater.

Table XV.

Effects of various substances on the liquor sanguinis and red corpuscles, as shown by modifications produced in the colour, coagulability, and general appearance, by their mixture with the blood immediately after its abstraction from the system —with authorities:—

I.—Substances which suspend Coagulation.

1. *Water.*—One part of blood diluted with from 3 to 60 parts of water, has its coagulation delayed from a few minutes to an hour or two. On filtering, after coagulation, the fibrin is collected in the form of a very tender gelatinous mass (Various Authors). If flowing blood is received into a cup, containing a small quantity of water, the latter appears to be absorbed by the clot, since the proportion of clot to serum is augmented in about an equal degree (Hey). In the latter case coagulation is hastened (Prater).
2. *Sulphate of Soda.*—Half an ounce in powder being agitated with six ounces of blood, no coagulation occurred on exposure to air; on dilution with double its quantity of water coag. took place; red corpuscles readily subsided from the fluid mixture (Hewson). A saturated solution did not altogether prevent coagulation; a weaker solution formed a soft, uniform jelly of a florid red colour (Scudamore).
3. *Hydrochlorate of Soda.*—Keeps the blood fluid, and allows it to coagulate on dilution (Hewson). ℥ij in powder to ℥ij of blood, after two hours, was thickened; passed through a linen filter, after 48 hours, no fibrin remained; coagulated on dilution with about four times its bulk of water (Davy). With a weak solution coagulated loosely (Scudamore). Even in the proportion of four parts of a saturated solution to one of blood, coagulation ensued on dilution; it is incapable of destroying this power. In minute quantities it hastened coagulation, and this is probably the case with *all the neutral salts*. When applied to the clot, after coagulation, it destroyed its power of contraction just as it takes away the power of contracting from muscle, and this also is probably the case with *all the neutral salts* (Prater).
4. *Tartrate of Soda.*—Retarded coagulation (Davy). A weak solution produced a weak gelatinous clot (Scudamore).
5. *Bi-borate of Soda.*—Fifty grains in powder to 3½ ozs. of blood, brightened the red colour immediately; after 24 hours, the blood liquid corpuscles completely subsided; supernatent liquor of a bright yellow colour; coagulated pretty firmly on dilution; undiluted portion retained its powers of coagulating after 16 days

(Davy). A saturated solution produced a weak uniform coagulation; the colour florid red (Scudamore).

6. *Nitrate of Potassa.*—The same effect as hydrochlorate of soda (Hewson). 20grs. to ℥j produced partial coagulation; after 24 hours a soft clot and pretty much fluid separated; soft fibrin left on the filter; filtered fluid coagulated weakly on dilution. ʒij in powder to ℥j of blood, after a few hours, thickened it; passed through a linen filter, a minute quantity of very soft fibrin was separated; after 48 hours, filtered portion coagulated with water; 20 grs. added to ℥j of blood, previously defibrinated, rendered the colour of a bright brick-red hue; and, on exposure to the air, it became of a florid scarlet on the surface (Davy).

7. *Sulphate of Potassa.*—Saturated solution formed a weak uniform clot of a florid red colour (Scudamore). Furnished a precipitate (Magendie). Suspended coagulation, like other neutral salts (Prater).

8. *Bi-tartrate of Potassa.*—ʒj to ℥j of blood, thickened, effervesced slightly, brightened the red colour; after three hours, had not coagulated; after 24 hours, corpuscles had subsided, and the supernatent liquor resembled serum; on dilution with water a very soft coagulum formed (Davy). About 75 grs. dissolved in 2ozs. of water, and added to ℥j of blood, gave the whole a deep olive colour, with a precipitate of albumen (Magendie).

9. *Triple-prussiate of Potassa.*—ʒj to ʒiijss. Coagulation suspended; colour a little brightened; corpuscles rapidly subsided; fibrin coagulated very slowly on dilution; coagulum very soft (Davy).

10. *Hydrochlorate of Ammonia.*—20 grains powdered to ℥j of blood; after 24 hours, was of a dark red colour and viscid, with a strong ammoniacal odour; a portion diluted with water, coagulated pretty firmly; after six days the diluted blood became putrid, but the undiluted portion was free from putridity, and coagulated with water as the former portion had done (Davy). Same effect as common salt (Scudamore).

11. *Sesquicarbonate of Ammonia.*—50 grains in powder to 3½ ozs. of blood, changed it to a dark red; after 24 hours, had separated into two parts, a supernatent orange-yellow fluid, and a viscid dark red sediment; diluted with water, both coagulated; after three days, the coagulated portion was slightly putrid, the undiluted portion retained its power of coagulating (Davy).

12. *Carbonate of Magnesia.*—15 grains in powder mixed with half an ounce of blood kept it liquid and of a more florid hue; red corpuscles subsided; on the following day supernated liquor had the appearance of serum; coagulated on dilution (Davy).

13. *Sulphate of Magnesia.*—Hewson believed that this salt, and many others, annihilated the coagulating power; but Prater instituted experiments, by which it appeared that coagulation is only suspended as in the case of the other neutral salts.

14. *Chloride of Barium.*—Twelve grains to ℥j; blood, after five minutes, remained liquid; colour, perhaps, a little bright; after 24 hours, slight subsidence of corpuscles, a little thicker, but still liquid; coagulated with water (Davy). In solution, rendered the colour arterial red; tolerable firm clot (Magendie).

15. *Nitrate of Barytes.*—Very similar to the chloride (Davy).

16. *Digitalis.*—ʒss of extract in ʒj of water added to ℥ij of blood, as it flowed from the arm, gave it the consistence of paste; after 36 hours it appeared much the same; on the following day the lower part was more viscid, as from subsidence of the fibrin; it was coagulated on dilution with water (Davy). Decoction of digitalis prevented coagulation (Magendie). Suspended coagulation; clot black (Thackrah).

17. *Opium.*—In a similar experiment to the above with extract of opium, after two hours, the blood was liquid, the corpuscles had subsided, leaving a stratum of viscid fluid, which admitted of being drawn into shreds; after three hours, slight coagulation; after 24 hours, a firm clot, cupped with a buffy coat (Davy). Considerably retards coagulation, and renders the coagulum less firm; blood kept fluid with it, as in the case of the neutral salts, coagulated on dilution; applied to the clot, it prevented its contraction; rendered the vermilion hue a little brighter (Prater). This gentleman inquires whether the effects of these narcotics do not depend on the saline matter which they contain.

18. *Belladonna.*—Retarded coagulation (Davy). Eight grains of extract to two ounces of blood much retarded it; did not prevent the contraction of the clot (Prater).

19. *Aconite.*—Retarded coagulation. (Davy.)

20. *Hemlock.*—Half a drachm of extract in ʒij of water kept ʒij of sheep's blood permanently fluid, and could not be made to coagulate although diluted with various proportions of water. The fluid extract acted mechanically in this instance, the quantity of water required for dilution separating the particles to too great a distance to admit of coagulation. When four times the quantity of blood was used it eventually coagulated; prevented the contraction of the clot (Prater). Retarded coagulation (Davy).

21. *Sarsaparilla.*—Retarded coagulation

(Davy). Darkened the colour; did not prevent the contraction of the clot (Prater).

22. *Cinchona.*—Coagulation suspended, but takes place on dilution with water (Davy, Prater).

23. *Jalap.* 24. *Columbo.*—(Idem).

25. *Gentian.*—Fifteen grains of extract kept half an ounce of sheep's blood perfectly fluid; it retained its vermilion hue, and coagulated with extreme difficulty on dilution.

26 and 27. *Tea. Coffee.*—Equal quantities of strong solution, added to equal quantities of oxen's or sheep's blood, retarded coagulation (Prater).

28 and 29. *Milk. Urine.*—Dilution with, retarded coagulation more than with water (Davy).

30. *Bile.*—Prevented coagulation (Hunter). Diluted with, retarded coag. more than water (Davy).

31. *Cayenne Pepper.* 32. *White Pepper.* 33. *Mustard.* 34. *Ginger.*—In large quantities suspended coagulation; but, as in the case of the extracts above enumerated, when used in large quantities, this did not take place on dilution, since a mechanical cause prevented (Prater).

II. Substances which hasten Coagulation.

35. *Euphorbium.*—In small quantity hastened the coagulation of the blood. Pepper and ginger in small quantities had the same effect (Prater).

36. *Carbonate of Lime.*—A teaspoonful in fine powder, mixed with an equal quantity of water, and added to an ounce of ox blood, hastened its coagulation three minutes; colour not changed, nor the contraction of the coagulum at all diminished. In far larger quantity, equal parts mixed up with water in the form of a paste to equal parts of blood, suddenly thickened it, but did not appear to prevent coagulation (Prater).

37. *Serum.*—Dilution of blood with equal parts of serum, or two parts of the latter to one of the former, decidedly hastened coagulation. When the blood of one sheep was diluted with a fifth its bulk of serum from another killed an hour or two before, it coagulated instantly; yet the coagulation of some of the same blood left undiluted did not take place before a minute and a half; that of ox blood was hastened six minutes. Minute quantities of hydrochlorate of soda, according to experiment, hastened coagulation, and it is believed that this is the case with all the neutral salts. The saline matter in serum exists in too dilute a state to keep the blood fluid even in the above proportions (Prater). Coagulation of blood remarkably hastened by dilution with serum (Thrœder van der Kolk). Not by virtue of dilution abstractedly considered, but by virtue of the saline matter contained (Prater).

Mr. Prater found that dilution with minute portions of water hastened coagulation, as also the addition of minute quantities of a great many substances, which in larger portions completely decompose the blood and annihilate coagulation. Thus, minute portions of ammonia hastened coagulation. Many substances, also, which excite the contraction of muscle after its separation from the body, hasten the concretion of the clot of blood. Many of the results in this section are most interesting and important, but it is desirable that they should be confirmed.

III.—Substances which Consolidate the Blood, and otherwise Destroy Coagulation.

38. *Sulphuric Acid.*—In infinitessimal quantities, liquified the blood and altered the constitution of the corpuscles. From 1 to 6 or 7 drops of concentrated acid to an ounce of blood, produced a great alteration of properties; the colour became deep black, and the fluid more viscous. A dilute solution, five parts to one of blood, prevented coagulation, gave a deep black colour, and no trace of fibrin under the microscope. A large portion of concentrated acid set the blood immediately into a dark viscid mass (Magendie). Rapidly consolidates from decided chemical changes in the liquor sanguinis and corpuscles (Prater).

39. *Hydrocloric Acid.* 40. *Nitric Acid.*—Effects were much the same as the last (Magendie, Prater).

41. *Phosphoric Acid.*—A single drop completely liquified the sample of blood; colouring matter disappeared; a precipitate (Magendie).

42. *Oxalic Acid.*—Three grains in a small quantity of water prevented coagulation; no trace of fibrin or corpuscles to be seen (Magendie). Fifty grains in powder to ℥ij of blood immediately coagulated it; clot of a pitch colour, firm consistence—no serum separated; a smaller proportion rendered the blood thick (Davy). Six grains to ℥j of lambs' blood, rendered it fluid for half an hour, it then gradually blackened and became a solid, from which no moisture exuded; an instance of rapid consolidation from decided chemical change (Prater).

43. *Tartaric Acid.*—Thirty grains in ℥ij of water to ℥ij of blood, prevented immediate coagulation; after two hours became frothy, tar like, dark brown, and viscid; after 24 hours had lost its viscidity, firmly coagulated without contraction or separation of serum; easily friable (Davy). Prevents coagulation; under the microscope completely decomposed (Magendie). When added in large

quantity, the blood remained black and fluid for a considerable time, yet it eventually became a black solid, from which no serum exuded, as in the case of oxalic acid, although tartaric acid does not consolidate albumen (Prater).

44. *Citric Acid.*—In large quantities blackened the colouring matter, and destroyed the coagulating process; applied to the clot arrested its contraction; in intermediate quantities only suspended coagulation, the colour remaining unchanged (Prater). Thirty or forty grains in solution to ℥ij of blood slightly retarded coagulation, but it took place in half an hour; clot firm, tough and brownish; after 24 hours no contraction or serum (Davy). Its solution liquified the blood with slight precipitation of colouring matter (Magendie).

45. *Acetic Acid.* — Retarded C. (Davy). Prevented C. (Magendie). Equal parts of sheep's blood and vinegar were gradually converted into a black semifluid mass; prevented coagulation by decided chemical changes (Prater).

46. *Lactic Acid.*—Prevented coagulation; colouring matter and fibrin disappeared; some delicate particles and corpuscles under the microscope (Magendie).

47. *Tannic Acid.*—Prevented coagulation; colouring matter separated in a filter possessed of its normal qualities (Magendie).

48. *Arsenious Acid.*—Liquefied the blood (Magendie).

49. *Ammonia.*—Prevented coagulation (Magendie). In large quantity totally destroyed the power of coagulation, but scarcely changed the colour or consistence; in minute quantity hastened coagulation, and diminished the contractility of the clot; ox blood was poured into five vessels, to three of these a few drops of a watery solution of ammonia was added, and in *all* the process of coagulation was complete long before it was so in the others. In those with ammonia the process was not gradual, but complete almost as soon as begun, and there was no contraction of the clot. The coagulation of 1½ ounces of ox blood was hastened by 15 drops of liquid ammonia, and kept permanently fluid by a teaspoonful (Prater).

50. *Solution of Potassa.*—Kept blood permanently fluid (Magendie, Scudamore). Colour blackened (Thackrah).

51. *Carbonate of Potassa.*—Half-ounce dissolved in ½ oz. water, and added to ½ oz. blood, completely destroyed the power of coagulating; neither colour nor any other sensible quality appeared to be changed (Prater).

52. *Sesquicarbonate of Soda.*—Fifty grains to 3½℥ blood produced immediately a brighter red colour; after 24 hours, became very dark and viscid like thick bile; slight subsidence of corpuscles; did not coagulate on dilution with water; the diluted portion was putrid after three days, the undiluted portion free from taint (Davy). Effect the same as the last (Prater).

53. *Lime.*—Immediately darkens blood, and speedily forms with it a tough mass, which, on exposure to air, becomes firm and hard (Davy). Acts by a decided chemical change on the liquor sanguinis and corpuscles (Prater). Lime water prevented coagulation (Magendie).

54. *Magnesia.*—Fifteen grains in powder, mixed with ½ oz. of blood, kept it liquid, and of a more florid hue; red corpuscles subsided; on the following day the supernatent fluid had the appearance of serum; diluted with water formed a flaky precipitate, but did not coagulate (Davy).

55. *Sulphate of Zinc.*—Rapid consolidation from decided chemical change (Prater). Saturated solution instantly formed a grumous mass; 5 grains to 1℥; of water, produced a thickening, but not coagulation (Scudamore).

56. *Sulphate of Copper.* 57. *Sulphate of Iron.* 58. *Acetate of Lead.*—(Idem).

59. *Sulphate of Ammonia.*—In aqueous solution kept the blood fluid; after 24 hours, colouring matter had subsided; the supernatent liquor was like serum, and did not coagulate (Davy).

60. *Alum.*—Prevented coagulation (Magengendie). Saturated solution instantly formed a very dense and tenaceous coagulum (Scudamore). Rapidly consolidated from decided chemical change; vermilion colour retained (Prater).

61. *Arsenite of Potassa.*—Coagulation prevented; completely decomposed the liquid (Magendie).

62. *Iodaret of Potassium.*—Completely solidified (Idem).

63. *Iodaret of Iron.*—Totally solidified the mixture of water and blood (Idem).

64. *Chloride of Gold.*—Prevented coagulation; altered the corpuscles (Magendie).

65. *Chloruretted Water.*—Prevented coagulation; black tinge (Idem).

66. *Nitrate of Strychnia.*—Most perfect liquefaction (Idem).

67. *Bi-chloride of Mercury.*—In large quantity totally destroyed coagulation; colour blackened (Prater). In the upper part corpuscles in solution; in the lower part a combination of chloride with albumen (Magendie).

68. *Calomel.*—Thirty grs. to ℥ss of blood rather accelerated coagulation (Davy); omitted in Section II.

69. *Spirit of Wine.*—Rapid consolidation from decided chemical change (Prater). Bullock's blood, mixed with half its weight of strong alcohol, remained fluid for some hours, and was at that time immediately coagulated by adding an equal bulk of

additional spirit to the mixture (Maitland). ℥j to ℥j of ox blood in two experiments decidedly hastened coagulation; albumen, is *immediately* coagulated by alcohol; blood, not before *a minute or two* has elapsed (Prater).

70. *Spirit of Turpentine.*—Although it changes the consistence of albumen immediately, some minutes elapsed before it acted on the blood; the change then induced is, perhaps, strictly called semi-coagulation; two teaspoonfuls to ℥j of ox blood *hastened* coagulation three minutes; the coagulum became black, and no contraction took place, so that it was rather consolidated than coagulated (Prater).

71. *Putrid Water.*—Prevented coagulation.

72. *Rhubarb Powder.* 73. *Myrrh Powder.*—Decomposed the liquor sanguinis so as to keep the blood permanently fluid; could not be made to coagulate in any way; acts by an astringent power (Prater).

IV.—SUBSTANCES, WHICH INTERFERE WITH COAGULATION, NOT INCLUDED IN THE FORMER SECTIONS.

74. *Nitrate of Silver.*—Modified coagulation, but did not prevent it (Magendie).

75. *Phosphate of Soda.*—Furnished a remarkable coagulum, in every respect differing from an ordinary clot (Idem).

76. *Hydrosulphate of Ammonia.*—Coagulation in every respect differing from an ordinary clot (Idem).

77. *Tartarised Antimony.*—Retarded coagulation (Davy). Two grains in six parts of water to one of blood, dissolved the corpuscles, tinged the liquid red, and formed a nebulous clot (Magendie).

78. *Chinchonine.*—A most delicate clot resembling vegetable jelly (Idem).

79. *Sulphate of Quinia.*—An almost invisible clot (Idem).

80. *Ether.*—With pure water dissolved the corpuscles, but did not prevent coagulation (Idem).

81. *Iodine.*—Rendered the blood brownish (Davy).

82. *Sugar.*—Dissolved in water in various proportions, and mixed with blood, the colouring matter fell to the bottom; a coagulating fluid remained suspended, and formed a more or less dense clot, according to the degree of dilution; the concretion of the coagulum prevented (Magendie).

83. *Hydrocyanic Acid.*—Did not distinctly retard or accelerate coagulation (Davy, Scudamore). Six drops in five parts of water to one of blood, corpuscles and fibrin disappeared! (Magendie.)

84. *Common Olive Oil.*—Mixed with arterial blood at the moment of abstraction, the whole solidified; formed a tremulous jelly; under the microscope no corpuscles, but small transparent masses (Magendie). Retarded coagulation, and allowed the corpuscles to subside (Various Authors).

An explanation, in part, of some of the phenomena above detailed, but more particularly of those comprised in the third and fourth sections, will be met with on reference to Tables III., IV., and XIII. The question again forces itself on the mind—are these substances, or any of them, liable to be absorbed into the vital current? And if Tiedemann and Gmelin have replied in the affirmative, the question again arises—Do they produce the same, or analogous effects upon the blood in the living system? The investigation is before us; if a similar reply should be made, a new field opens itself for the improvement of medical practice, and the industry of the most skilful chemists and physiologists will be required to ascertain, with the greatest possible precision, the effects of medicines on extravasated blood before the loss of its vital principle.

Before I leave the detail of the effects of various kinds of inanimate matter upon the coagulation of the blood, I should mention that Mr. Hunter, and others since his time, imagined this process to be hastened by a *vacuum*. The imperfect exclusion of the atmosphere has undoubtedly a retarding effect. The coagulation of blood, placed under an exhausted receiver, was hastened, according to the experiments of Dr. Scudamore, and retarded, according to those of Dr. Davy. The effects of *electricity* and *galvanism* have also been tried, but, upon the whole, with negative results. Dr. Scudamore found the clot a little more contracted by the action of the former, and, in one or two instances, coagulation prevented by the latter; but the experiments of Magendie, and others, lead to a contrary conclusion.

Our investigations have led us progressively to one of the most important of all the circumstances connected with the history of the blood, and to the threshhold of those practical considerations which are the aim and end of all our chemical, microscopical, and physiological inquiries. We have now to examine those modifications of the coagulability of the blood which correspond with the vital conditions of the system.

Dr. Wilson has forcibly urged upon our minds the importance of this property of the blood. The following is his own language:—"A drop of blood, self-coagulating, is the simplest notion of life that I can form. Life begins in the drops and atoms in structures too delicate and complicated for such divisions as nerves and blood-vessels. The drop, smallest of the small, of blood, without vessel, brings us nearest to the beginning of structure and its functions! We know that if blood be not fluid (current say) there is no life—that if it cannot coagulate, no life—that if it have no salts, no life—that if its exchange of principles with the air be prevented, no life (instantaneously)—that if it

be not elaborated in the kidneys or the liver, no life—that if it be poisoned by the injection of prussic acid, no life—that distant structures are immediately affected by such injection, as, for instance, the stomach by tartar emetic—that it is *next* to the air, and to external forms of matter in the lungs, and by absorbing currents! Again, that it is actually, sensibly, visibly changed, repeatedly—that it is common,—essential to all structures—is it not, then, worth inquiry? But when we observe, that it is gifted with the power of congealing itself! of spoiling itself! of arresting its own current, of poisoning it in its course, how is our wonder increased! How great must be our anxiety to study this unique, mysterious material!

"You must attend to the partial view of the blood, obtained by dissecting it into *serum*, *fibrin*, &c.; but only that you may put it together and study it, not in the *dead*, but the *living* body. Common, universal, ever-moving, ever-changing—how strange that the blood should not have even the advantage of any of the structures of which it forms the bulk—of being examined in the entire body!—but that it should always be looked at in a cup out of the body!—'a material that is universal, and abundant, and elementary, must be the best clue in explaining diseased structure,' as it is for healthy."

I approach the present division of my subject with the above quotation from Dr. Wilson's lectures. It will be my humble province to bring before you, as I proceed, the facts which bear out every word therein contained.

Sir A. Cooper ascertained, by experiment, that blood coagulates much more rapidly, when confined in a dead vessel than in a living one, the circumstances being rendered, as nearly as possible, similar in every other respect. In the latter case, as much as three hours and a quarter elapsed in some instances. Mr. Thackrah confined blood in the jugular vein of a living dog, removed it from the body, immersed it in water at 98°, and at the expiration of an hour found it fluid, while that drawn immediately from the jugular vein of a living dog into a portion of dead jugular vein, and exposed under water to the same temperature, coagulated firmly in fifteen minutes. It appears, therefore, that "blood confined in a vessel, which, from the time, vitality could not have deserted, did not coagulate in an hour, while that confined in a lifeless vein was firmly coagulated in one-fourth of that period."

These experiments coincide with others which are in a manner made to hand for us. It frequently happens that the blood is fluid, but still coagulable several hours after apparent death, in parts of animals killed by violence. So, also, in parts separated from living animals, actual death occurring at various periods; the time it remains coagulable is also variable. The blood remains fluid and still coagulable on extravasation, in the living leech. It appears, moreover, from experiments similar to the above, that the coagulability of blood corresponds, in a great measure, with the *degree* of vitality of its containing vessels. From these facts it has been inferred, that it is the *nervous* influence which modifies coagulability. Upon a future occasion we shall have to investigate the intensely interesting and important subject of the nervous influence upon the blood; but the above facts, and others of a similar character, do not warrant that deduction, and it will be well, as much as possible, to avoid proceeding farther in our conclusions than we are authorised by the facts before us. The contact of blood with the living vessel retards its coagulation, so also does the contact of blood with blood, in a minor degree. Blood has a lower degree of vitality than vessel, and the effect of the vessel corresponds with its degree of vitality. The inference to be drawn is, that the state of the coagulability of the blood corresponds with the vital condition of its containing vessels. Having thus clearly ascertained that relations subsist between this process and the *vital powers* of the circulating system, we are called upon, as practitioners of medicine, to study these relations with all the attention and diligence that can possibly be brought to bear upon the subject.

Some practitioners confound together three different circumstances: the period at which coagulation commences; the time required for the perfect coagulation of the whole mass; and the time occupied by the concretions of the clot, with the consequent separation of serum. These must be carefully distinguished; and, in order to estimate them correctly, blood should always be examined under circumstances as nearly as possible uniform.

1. *The Period at which Coagulation commences.*—This may be determined by a very simple process. Immediately after blood is drawn take a penknife, or any similar instrument (or allow an assistant to do so), insert it deep into the fluid, and draw it up obliquely; as soon as coagulation commences, you will find a portion of the clot resting upon the blade; by repeating this at intervals of a few seconds, with a watch at hand, the point may be determined with a considerable degree of nicety.

Coagulation takes place at very different periods in different animals. I have already stated, that human blood undergoes this change in from three to eight minutes. Haller observed that of the mouse to coagulate in a moment. Mr. Lane finds that of the frog to occur very rapidly; and this, probably, holds good with respect to reptiles generally. Mr. Thackrah states, that the

process commences in the horse at from five to thirteen minutes; in the dog, at from half a minute to three minutes; and in the sheep, from half a minute to two minutes. Thus it will be found that coagulation commences sooner in small and weak animals than in those which are large and strong; the period is also very greatly influenced by states of the system. In youth, as compared with age, blood coagulates quickly. Muscular exertion has also an influence. Mr. Hunter records the case of two deer being run till they dropped down and died, the coagulating power of the blood was destroyed, and the muscles did not contract. When oxen are run very hard, and slaughtered immediately afterwards, their blood frequently coagulates more quickly than common. According to the experiments of Mr. Vines, the temperature to which the body is subjected exerts an influence; in animals previously subjected to an atmosphere at 45° or 50°, coagulation was retarded, and a moderately high temperature had a contrary effect. After a great many trials, Mr. Thackrah found that blood from a fasting animal is longer before coagulation commences than that from an animal that has been recently fed; in fact, this constituted the most marked difference in the vital fluid under these particular circumstances.

The state of the coagulability of the blood conveys to the practitioner a certain amount of positive and valuable information as to the condition of the constitution of his patient, and the *character* of the disease which may exist; and I believe this might be made more available at the bedside than is usual; a disposition to coagulate immediately, coincides with the state of *syncope*. When an animal is bled to death, in proportion as the blood flows the period of coagulation is hastened. Blood was received into three small cups from the neck of a slaughtered sheep; the first was filled immediately on the knife dividing the vessels; the second, a minute and a half afterwards; and the third, a few seconds before death. The time which elapsed between the filling of the cups and the commencement of coagulation, was, in the first, a minute and a half; in the second, a minute; and in the third, half a minute. This is, I believe, a universal fact; at least all the experiments made in an uncomplicated manner, and accurately noted, bear it out. But not only does blood coagulate rapidly in proportion to its loss, and the approach of death, in animals bled to death, but the same fact obtains in venesection in the human system, in health, and for the most part in disease. The last drawn blood coagulates more quickly than the first. Mr. Thackrah found, in his observations, that when the first portion extracted commenced to coagulate in five minutes, the period was reduced to two minutes, and the patient became faint, and when 90 seconds were required by the first portion, *deliquum* coincided with the occurrence of coagulation in 40 seconds. Mr. Thackrah puts the deliquum and rapid coagulation as cause and effect, you observe that I put them as coincidences. The first portion of blood drawn from the arm of a female labouring under fever, remained fluid for seven minutes, a similar portion taken immediately before tying up the arm was coagulated in three minutes and a half. Of two portions of blood received from a man the subject of incipient enteritis, the first, as in the former case, began to coagulate in seven minutes, and the last in four. This is one of the most important facts in the physiology and pathology of the blood.

In explanation of the rapid coagulation of the last flowing blood, Hewson, and I believe Hunter, maintained, that it arose altogether from an impression by the containing vessels, but experiment has shown that this is not exactly the case. The last flowing blood contains a larger proportion of serum than the first; and, according to Dr. Davy, it has also a lower specific gravity. Now, on turning to Table XV. 37, it appears that dilution with serum hastens coagulation. Dr. Davy, Thrœder Van der Kolk, and Dr. Alison, have availed themselves of this fact to explain the phenomenon; and since the specific gravity is lower, as will be shown more particularly in the next lecture, it would appear that there is no addition of animal matter, but that the rapid coagulation depends on dilution of the liquor sanguinis, and on an increased proportion of saline matter. It is highly probable that several circumstances concur in the production of this remarkable effect.

But in other states of the system the blood has frequently a disposition to remain longer fluid than usual. Dr. Geo. Fordyce remarked this in the inflammatory diathesis, and a host of successors have confirmed his observation. Mr. Thackrah found, in a case of pneumonia, that coagulation did not commence till the expiration of 8 minutes; in a case of urticaria, in a stout young man, not until 13 minutes; in a case of phthisis, in 4 minutes; and in a case of fever, with palor and emaciation, in 4 min. 10 sec.

These facts lead to the legitimate conclusion, that the character of a disease, as being tonic or atonic, as it is usually expressed, corresponds with the state of the coagulability of the blood. It may be taken as a pathological datum, that blood is speedily coagulable in debility. The formation of a clot, at the mouth of a bleeding vessel, is well known to be the first natural check to hæmorrhage, and we see how admirably fatal results of this accident are provided against, by the law of nature, which renders the blood more coagulable as it flows. If it had not been for this,

persons wounded in battle, or by accident, not having surgical assistance at hand, must at all times have perished, and females, flooding from the uterus, with the best assistance, would have been in the same case. Loss of blood, besides diminishing the action of the heart, disposes the remaining blood to concrete instantly, by which two circumstances death from hæmorrhage is comparatively rare. Looking to a more extensive practical application of the knowledge we have acquired, the following aphorism may perhaps be adopted:—The speedy occurrence of coagulation on bloodletting affords a strong reason against the continuance of depletory measures. At the same time we must remember, that it is by no means certain that specific influences are not sometimes exerted over this property of the blood, by the introduction of minute portions of foreign substances into the vital current. Some reason for believing that such is the case, as respects minute quantities of saline matter, have already transpired.

An interesting consideration arises respecting the diagnosis of diseases requiring blood-letting. Cases now and then occur in practice where it is difficult to determine whether bleeding is indicated, or the contrary. In such cases, Dr. Marshall Hall recommends trial bleedings, in order to ascertain the tolerance of loss of blood by the system. The patient is placed in an upright position, and in a certain class of diseases he bears the loss of a great quantity of blood without fainting; whereas, in in those of an opposite character, the loss of a very small quantity induces that effect, or a tendency to it. This want of tolerance is regarded as a sure test of the impropriety of the loss of blood, and of depletory measures generally. I submit, with much deference, whether the knowledge we have of the correspondence between weakness of the system and rapid coagulability could not be made available in this instance. A patient may lose six, eight, or ten ounces, before the defective tolerance becomes manifest, and the loss of this quantity may do positive and permanent harm. One, or, at most, two ounces, with the proper precautions, would enable us to ascertain the period at which concretion takes place; and I think there is reason to believe, that this might prove as useful a guide to a knowledge of the state of tolerance as the effect on the system of loss of blood.

2. *The Period at which the Coagulation of the Mass is completed.*—The fluid, gradually becoming thicker, after the commencement of the process, attains a pretty firm consistence in variable periods. Hunter says, 15 to 20 minutes, and Hewson found it sometimes an hour and a half before completed; but it must be remembered that these observations were made, for the most part, on morbid blood. The liquor sanguinis, being homogeneous, the length of time taken up by the formation of the clot, corresponds pretty nearly with the early or late commencement of coagulation. I am not at present aware of any accurate observations which establish marked difference in this respect; but physiologists have so frequently confounded these circumstances together, that it is somewhat difficult to make out the true state of the case.

3. *The Concretion of the Clot and the Separation of Serum.*—It has already been stated, that a considerable period elapses before the contraction of the clot is complete. Mr. Hunter did not always distinguish between coagulation and the act of concretion, and many of his remarks apply to the latter. In describing coagulation he says, "More and more of the serum is squeezed out, which cannot arise from the serum being lighter, and issuing out spontaneously, for, without some expelling force, it would be retained mechanically by capillary attraction, as in a sponge. The blood which is longest in coagulating concretes most strongly, and produces the most complete separation of its parts." When concretion has taken place the coagulum swims in the serum for the most part, but it sometimes happens that concretion does not take place at all, and no serum is separated; in fact, the period and the intensity of the contraction of the clot is liable to as much variation as the period of coagulation. From imperfect contraction the coagulum is frequently large, loose, and flocculent; on the contrary, it may be small, dense, and compact. Blood taken from an animal in *articulo mortis* never fully separates its serum, and rarely throws it off even in a small quantity. This also appears to be a universal fact; and from direct experiment we learn, that rapid coagulation corresponds, as a general principle, with a retarded and diminished exudation of serum, as expressed by Dr. Maitland, "Whatever hastens the loss of the vitality of the blood, serves also to accelerate the subsequent changes, as well as to diminish the ultimate contraction of the fibrine." Accordingly, weak contractility of the clot answers to the state of debility in the living system; on the contrary, rapid and firm contraction is the index of strength and entonic action.

You will thus understand that when the character of diseases comes before us as a subject of investigation, among other important qualities of the blood, we shall have to consider its state of "self coagulability." In maladies which arise from contagion and malaria, and those attended with typhoid symptoms, the clot is remarkable for its weak contractility, the extreme case of which, as remarked by Dr. Alison, is its perfect and permanent fluidity. In pleurisy, pneumonia, and rheumatism, as they occur in the vigorous with high entonic action, the clot

is found to be compactly and firmly contracted. The density of the coagulum, and the proportion which it bears to the serum, will require to be more fully considered in the next lecture; in the mean time, making allowance for specific influences, we shall not err if, in cases in which the examination is applicable, we adopt the opinion of Mr. Hunter, that we can best judge of the state of the body by the readiness or difficulty with which blood coagulates, and by the firmness or looseness of the coagulum.

LECTURES

ON THE

FUNCTION AND DISEASES OF THE WOMB,

BY CHARLES WALLER, M.D.

Delivered at his Class Room,

BARTHOLOMEW-CLOSE, BARTHOLOMEW'S HOSPITAL,

In a Course of Lectures on Midwifery and the Diseases of Women and Children.

LECTURE IV.

Active Menorrhagia; symptoms and treatment.—Passive Menorrhagia; symptoms and treatment.—Case where the Plug was used.—Dr. Haighton's Plan.—Transfusion of Blood.—Menorrhagia repeatedly attacks Women.—Sometimes results from Diseased Liver, or from Actual Disease of Womb.

DISORDERS OF THE MENSTRUAL FUNCTION.

(Continued.)

Active Menorrhagia.

I MENTIONED to you, at the conclusion of our last lecture, that there were two forms of uterine hæmorrhage, designated by the term menorrhagia, viz., the active and the passive, and I now call your attention to the former variety. The approach of active uterine hæmorrhage is marked by a sense of general fulness and heat, or by an alternation of sudden flushings with chilliness. You will observe an unusually frequent, harsh, and throbbing pulse; and, in addition to these general symptoms, there are pains in the back and loins indicative of uterine irritation. In the most simple, although it must be confessed not the most common form of the disorder, after these sensations have continued for a longer or shorter period of time, a quantity of florid red blood, apparently arterial, escapes from the uterus, the pains are relieved, and the constitutional symptoms subside.

You must not, however, expect, in the larger number of cases, such sudden terminations of this affection. You will, on visiting your patient, find her still labouring under febrile excitement, notwithstanding the discharge of blood; the pulse is hard and frequent, there is pain in the head, the skin hot and dry, the tongue furred, and the lips parched; the flow, also, may have produced no alleviation, as regards the uterine uneasiness. I have already told you, that the cause of this affection is to be attributed to increased excitement of the heart and arteries; your first indication, then, is to diminish vascular action generally. This may, in the first instance (provided you are called in the early stage), be effected by removing blood from the arm in the usual way, proportioning the quantity to the necessity of each individual case. Great caution should be exercised in determining the extent to which this remedy should be carried; do not forget, that there is hæmorrhage going on which it may be difficult to arrest; on this account I scarcely ever, in my own practice, recommend a second venesection.

It is absolutely necessary that the recumbent posture be strictly enforced, and stimuli of every kind, whether of a general or local nature, be scrupulously avoided. Accumulations of feculent matter in the rectum will greatly aggravate the disorder, whether it be of the active or the passive kind; you will, therefore, see the propriety of maintaining a free state of the bowels; the mildest laxatives are the most proper, such as castor oil, a combination of rhubarb with sulphate of potassæ, or the use of an enema of common gruel with salt; the latter, in most instances, is to be preferred, care being taken that the fluid is not used too warm. Irritating purgatives are very improper, as their operation has a direct tendency to increase the flow of blood. After the use of blood-letting and laxatives, depressing medicines are the most proper, and I know not that you can select one which will answer your purpose better than nitrate of potash; some give the preference to digitalis, or the tartar emetic, but these are not such manageable remedies as the potash, and when we can secure the same good effects by our milder medicines, we are surely justified in making choice of them: from twelve to twenty grains of the nitrate may be given every few hours; the stomach will retain the larger dose, if given in a state of great dilution, say, in a teacupful of barley-water. Its effect is *sensibly* to diminish the frequency and force of the pulse, producing, at the same time, a feeling of nausea.

By this plan the activity of the constitutional symptoms will be soon subdued; and, should the hæmorrhage continue, topical remedies, directed to the uterus itself, will be required, the most common and most effective of which is, the application of cloths, wetted with the coldest water, to the vulva, perineum, and pubic region; I have seen great benefit derived from a bladder, containing pounded ice, placed in the latter situation. Do not thoughtlessly employ your cold applications, for there is no part of the treatment

which requires a greater degree of circumspection; if used when febrile or inflammatory symptoms are present, no good, but harm would result; your first indication in the treatment of this disorder being, as I have already told you, not so much to stop the bleeding by any direct means as to lower the action of the heart and arteries; your object, in short, is the removal of the *cause*, and not the mere relief of the *symptoms*. The diet must necessarily be spare, and, as common beverage, iced lemonade, barley-water with acid, or toast-water, are the proper articles; fermented or spirituous drinks must not be allowed. Diaphoretics have been recommended by some, with a view of keeping up the action of the cutaneous vessels; no reliance can be placed upon this class of remedies. Mercury has also had its advocates, but its utility may be fairly doubted, especially during the continuance of the active symptoms. Menorrhagia cannot long continue in its active form, symptoms presently make their appearance, characterising

Passive Menorrhagia.

This is not always preceded by active hæmorrhage. In weakly, irritable, and delicate habits, it may have been passive from its commencement. The patient's situation is here much more alarming, and the case assumes a very formidable character, if the bleeding be not speedily arrested. The symptoms, as might be expected, are totally different, and the plan of treatment the reverse of what has been recommended in the active form of the complaint.

With this hæmorrhage there is a rapid reduction of the little strength previously existing; the countenance is pallid, and, in some cases, assumes a bloodless appearance; the pulse hurried and feeble; the extremities, and sometimes the general surface of the body, cold; there is weight and pain in the head, particularly over the eyebrows and forehead; a distressing sensation of faintness and giddiness, and occasionally nausea and vomiting; laborious respiration is a frequent attendant on the more severe and dangerous forms of passive menorrhagia.

I mentioned to you, that the blood which passed away in active hæmorrhage was of a florid red colour; here, on the contrary, it is dark-coloured, apparently venous. The symptoms enumerated occur in a more slight or a more aggravated form, and hence the disease may require for its relief a more or less energetic method of treatment. In the mildest variety, however, the recumbent position must be submitted to at once, for every remedy will fail unless the patient keep herself perfectly quiet. If the bowels be confined, a common enema should be prescribed, to be used nearly cold. Great benefit will be experienced from the exhibition of astringent tonics, the mineral acids for example, combined with vegetable bitters, such as calumba, gentian, quina. If your patient's taste be somewhat fastidious, and you wish to please her palate, order her the infusion of roses, with an additional proportion of acid, some syrup, and about a drachm of tincture of kino. This is a very agreeable draught, and, in many instances, has proved a medicine of no mean efficacy, and I should recommend it where the stomach is irritable. In my own practice I have seen more advantage from the use of the tincture of the muriate of iron, in doses of from fifteen to twenty minims every four hours, than from any other *single* remedy. It must, nevertheless, be admitted, that in many cases you will be obliged to try a variety of medicines before the proper one be ascertained, as the same does not agree equally well with every patient.

The milder cases of passive menorrhagia are those in which the application of cold is peculiarly serviceable, provided it be assiduously employed. An ordinary nurse is not to be trusted with this application; it ought to be superintended by the practitioner himself; if he leaves the room, simply *directing* cold to be applied, it is probable, on his next call, he will discover, not a cold napkin, but a warm fomentation to the vulva, in consequence of the nurse having neglected its frequent renewal. It is scarcely necessary to state, that, in the more severe degrees of the affection, where, for example, there is general coldness of the surface, these applications must not be had recourse to, as the powers of the system would inevitably sink under their use; on the contrary, it is often necessary to apply bottles of hot water to the feet, axillæ, &c., and in some cases to envelope the whole body in warm flannels; more powerful internal remedies will also be needed, and of these the superacetate of lead occupies the first place, its power as a styptic has been long known, from whatever part of the body the blood may be flowing; but as griping and colicky pains are so frequently produced by its use, we generally exhibit opium at the same time: to guard against this effect, superacetate of lead half a grain, opium quarter to half a grain, may be exhibited every two hours; after four pills have been taken, it is better to wait awhile, and should your patient complain of pains in the abdomen, you must discontinue the remedy; if there be no such unpleasant symptoms, after the lapse of three or four hours, the same number of pills may be again prescribed, watching the symptoms closely, in order that it may be immediately omitted, should circumstances require it. Under these restrictions, and with the exercise of proper care, the superacetate is invaluable, although we must acknowledge it to be a dangerous remedy, if used imprudently.

I know not whether vegetable acids would

be productive of more advantage than mineral, never having tried their efficacy. My thoughts have been directed to this subject from a fact related to me by one of my patients; she stated that she was always able to produce a temporary suspension of the menstrual discharge by taking a "gill of common vinegar," so that if she wished to pass the evening from home, during the catamenial period, her practice was to drink the vinegar, and this, according to her own statement, had the invariable effect of stopping the discharge until the following morning, when it regularly and constantly returned. The secale cornutum is supposed by many to operate beneficially in restraining these hæmorrhages, and although much reliance cannot be safely placed upon it, yet it deserves a trial; half a drachm of the essence, as prepared by Battley, is a fair average dose, mixed with a cup of gruel, to which a small quantity of ardent spirit has been added; this potion may be repeated every six or eight hours. The secale should not be trusted to but as an adjuvant, and ought not to supersede others whose effects are more decided.

Should the hæmorrhage still continue, something further must be attempted; and first I would recommend the use of the plug; strips of linen, either dry, or wetted with an astringent solution, are gradually and gently to be insinuated into the vagina until the cavity is completely filled up; the obvious effect of this is to detain the blood within the uterus, where it will coagulate, and, by forming a clot around the orifice of the bleeding vessels, must, at least for a time, prevent any further effusion. If the plug be too soon removed, or the female be suffered to move about, the little temporary barrier thus formed will be dislodged, and the hæmorrhage will recur.

There are sometimes so much tenderness and irritability of the genitals and neighbouring parts, that the application cannot be borne for a sufficient length of time, the female complaining of pain, with a bearing-down sensation, and frequent desire to pass water and to empty her bowels; here the plan of proceeding is plain, you must remove the plug; where no such inconvenience is experienced, you will do well to allow it to remain for three or four days, and should there be, on its removal, any indications of returning hæmorrhage, a clean one should be at once introduced.

One of the most severe cases of this kind which ever fell under my own immediate notice, was one which I attended in conjunction with one of my pupils; here the plug proved of permanent benefit, after other measures had failed; the quantity of blood lost by this lady was enormous, very nearly, if not quite, equal to that which now and then bursts forth from the puerperal womb; on one occasion the bed was literally soaked with blood; it was long before this patient was restored to perfect health.

Another plan was strongly recommended by the late Dr. Haighton, in his invaluable lectures on midwifery, viz., the injection of a styptic solution into the cavity of the womb itself: this may easily be effected by means of an elastic gum bottle, to which a curved pipe has been attached; the patient is to be placed on her left side, and the extremity of the tube introduced about three quarters of an inch within the os uteri; on pressure being made upon the elastic bottle, the fluid will, of necessity, be diffused over the whole internal surface of the uterus, and by coming into contact with the bleeding vessels, will produce coagulation of the blood around, and, probably, to a certain extent, *within* them, and thus prevent, for a time, any further hæmorrhage. The liquid recommended by Dr. Haighton for this purpose, consists of a solution of sulphate of iron in an infusion of strong green tea; other substances will answer your purpose as well, viz., common alum, sulphate of zinc, or sulphate of copper, dissolved in a decoction of oak bark; the choice of the styptic being left to the discretion of the practitioner. About half an ounce of such liquid may be safely injected three or four times in 24 hours. When you have made up your mind to this mode of proceeding, I would recommend you to superintend it yourselves, as it requires some little anatomical knowledge to pass the pipe through the mouth of the uterus. Dr. H. used to say that he believed he had saved many lives by his injections.

A very nourishing diet is essentially required in these cases, or the patient will soon sink below the possibility of recovery. Those articles are the most proper which contain the largest proportion of nutriment in the smallest bulk, as the stomach will not retain much at a time. This organ, in common with others, suffers from the debilitating effects of the hæmorrhage, and, consequently, its digestive powers are proportionally decreased. Stimulants are also proper; ale, stout, or wine may be allowed, as best suits the inclination of the patient. The common form in which I administer nourishment is, the yolk of a new-laid egg beaten up with a small quantity of warm water, a tablespoonful of brandy, with sugar and nutmeg *ad libitum;* this is a most nutritious as well as an agreeable compound, and will often be retained by the stomach when everything else has been rejected; about half an ounce of this mixture may be frequently given until two or three eggs have been taken; some prefer beef-tea, broths, or the animal jellies, all of which are beneficial; and as soon as the stomach is a little roused from its torpor solid food is admissible.

Change of air will contribute greatly to the restoration of health, when convalescence

has sufficiently advanced, and then also the daily use of the bidet is particularly useful.

Would the transfusion of healthy hot blood be of service in the more extreme forms of menorrhagia? I am inclined to give my opinion in the affirmative; for, in the dissection of those who have died from this cause, no organic change has been discovered in the womb. The organ has been seen to be enlarged, and the orifices of the small vessels ramifying on its lining membrane more patulous than in their natural and healthy condition. I am well aware of the objection which has been raised against this operation, and which has been often reiterated in nearly these words, or at any rate to this effect:—"What is the use of transfusion, whilst the drain is still going on? As fast as you put blood into the arm it would escape by the orifices of the uterine vessels." Let us examine this objection a little. We readily allow that the extremities of these vessels are sufficiently open to allow the passage of pure blood through them, yet this state is the result of debility, and this debility, be it remembered, occasioned by the loss of the vital fluid. Now, it is by no means inconsistent with sound principle to expect, under these circumstances, that, with an increase of pure, healthy blood, this condition of general exhaustion will be relieved, and such a degree of tonicity given to the muscular fibres of the uterus, as well as to its capillary vessels, as to produce a certain degree of contraction, which would be sufficient to avert the impending danger.

Do not for an instant suppose I am recommending transfusion as one of your *common* remedial means, where due attention has been paid, it will be *very rarely indeed* either necessary or proper; but the extreme case may occur, and our art is confessedly imperfect, if we have not a remedy for *this* case, as well as those which are attended with less danger. So far as regards myself, I should feel that I had not performed my duty if I had suffered a patient who had died of hæmorrhage without having proposed the operation, especially as I can perceive no practical objection, being fully persuaded, when carefully performed, it is an operation which cannot injure, but, on the other hand, well calculated to be of immense benefit. I shall, however, have another opportunity of examining the merits of transfusion, and, therefore, for the present shall dismiss the subject.

Some women are the subjects of menorrhagia every month, so that as soon as, and in some cases before they have recovered from one attack, they are, unfortunately, called upon to suffer another. It is here very desirable to employ those remedies in the interval which are likely to prevent a recurrence; the circumstances necessary to be attended to are, first, the state of the constitution; secondly, the nature of the affection, whether active or passive; and, thirdly, the exciting cause. These preliminaries having been ascertained, the proper treatment will suggest itself to the mind of the practitioner. The indications are, to build up the constitution where it is weakly, and to depress if there be too much power in the circulatory system.

In long-continued passive hæmorrhagies, the liver is a viscus, into whose condition you should carefully examine, as, next to the heart itself, there is, perhaps, no organ in the body the healthy state of which is so necessary to maintain the balance of the circulation; if there be hepatic derangement, the smaller doses of mercury, recommended in a former lecture, should be exhibited.

I have, lastly, to observe, that discharges of blood from the womb are not always the result of mere functional disorder; they are the never-failing attendants on many organic diseases. Hæmorrhage takes place in polypus, hydatids, fungoid disease, cauliflower excrescence, malignant ulcer, carcinoma, &c. Some females, again, lose considerable quantities of blood during pregnancy. I have a patient who, for the first four months, has repeated floodings; these cases are easily distinguished by their appropriate signs. In every instance of protracted bleeding from the womb, a minute examination, per vaginam, must be made, that you may satisfactorily ascertain its nature and its cause, for incalculable mischief would be the result of erroneous opinions in this respect.

ADVANTAGES OF INOCULATION IN THE VENEREAL DISEASE.

To the Editor of THE LANCET.

SIR:—The silence of the profession and the press in England, on the appreciation of inoculation in the diagnosis and treatment of the venereal disease, induced me last year to read a paper on the subject before the Parisian Medical Society.

I perceive by the medical journals, which have but just come to hand, that Mr. Mayo has repeated Mr. Ricord's experiments, and has satisfied himself of the value of inoculation in a theoretical point of view, as settling some controverted points, as to the common or different origin and nature of different venereal affections; but in the same page I observe the following paragraph:—

"As affording a practical criterion, however, it will be seen that his (Mr. Ricord's) method does not carry with it positive certainty; the result he obtains is only an approximation, and requires to be corrected by the observation of the character of the primary sore, as I shall presently show."

Such an opinion coming from Mr. Mayo, who has evidently performed several experiments

with syphilitic virus, deserves consideration; but without doubting an instant the facts which he has brought forward, I hope to show that they admit of an interpretation very different from that given by the lecturer himself, who, I trust, will excuse my manner of viewing the subject, more especially as he has followed this course in respect to the experiments of Hunter.

Mr. Ricord has produced artificial chancre in upwards of 400 cases, and the results of inoculation of the syphilitic virus have been, in every instance, both regular and constant. Mr. Mayo states that inoculation has succeeded under his hands, and does not mention a case of failure.

In pursuing my investigations at the Female Venereal Hospital, I have employed inoculation on a large scale in a variety of doubtful cases, and I will undertake to produce a chancre, *a volonté*, as regularly as described in the paper you did me the honour of publishing lately, and any number of times, without one failure.

Does not, then, this method carry with it positive certainty? Can the result obtained be termed only an approximation?

I said above, I could produce artificial chancre any number of times without a failure; I may repeat the same thing with respect to the benign phagedena of Mr. Mayo; but, from reasons I stated in my late paper, I should decline doing so, as from the nature of the constitution, the artificial chancre *may* become an intractable sore. The fact, therefore, of phagadena producing a sore, does not in the least invalidate the value of inoculation; it has been the means of proving to Mr. Mayo himself, that phagedena is not a separate disease, but only a peculiar physical appearance given to the sore by the constitution, for he says, "I believe venereal phagedenic sores to arise from the common poison of syphilis infecting persons of a certain peculiarity of habit, combined or not with a local predisposition to that form of sore." Thus Mr. Mayo has fully comprehended the value of inoculation, as proving that benign phagedena is nothing more than syphilis plus phagedena, yet he reproaches it a few lines further on, as affording only an approximation, and denies that we can place reliance on it as a positive and practical criterion, yet neither himself or any one, to my knowledge, has been able to simulate the effects of the virus, by inoculating any secretion at present known, whereas the effects of the virus are constant and regular, as I above stated.

As Mr. Mayo is not convinced of its practical nature, I will give some further examples of the use the surgeon may make of inoculation. If any one doubts the difficulty of diagnosing syphilis, and the want of some means of distinguishing it from other affections which simulate it, let him consult the work of Parent Duchatelet. That author state at page 152—6, that the surgeons of the dispensary, who are specially appointed for the examination of the prostitutes, and, consequently, have great tact, are frequently at a loss to decide if a woman submitted to their examination is diseased or not; during a space of eight years, 886 such cases presented themselves, and it was impossible to decide in several of these cases, even after a lapse of several days. This doubt on the diagnosis of several symptoms of syphilis occured in the following proportions:—

In cases of Pustules	283
Buboes	28
Vegetations ..	67
Discharges ..	26
Excoriations .	59
Ulcerations ..	145
Chancres	266
Itch	8
Fistulæ.....	4

The number of these cases in which the diagnosis, by means of the ordinary signs, is difficult, has not declined, but, fortunately, inoculation enables the surgeon to decide at once. I have, at the Female Venereal Hospital, often recourse to it, and with the greatest success. I gave an instance of its utility in my paper. Mr. Ricord has furnished me with the following case, at present under his care, at the Hopital du Midi:—

A boy, 15 years of age, of puny stature, lymphatic temper, and not apparently arrived at the age of puberty, so slightly were the organs of generation developed, entered the 7th ward, suffering under an ulceration of a suspicious character in the left groin. He gave the following account of himself:—

Had never had connection with any females, or frequented their society; about three weeks previously the sore appeared on the groin, but it could not be ascertained if it commenced as a bubo or a sore.

As this sore presented all the character of chancre, except as to its history, inoculation of the secretion was performed, and a well-marked characteristic pustule followed. On these data the boy was interrogated more closely, and Mr. Ricord then found that he was in the habit of sleeping with a fellow-workman who presented chancres on the penis, which dated some weeks. Both parties denied any unnatural practices; and whether the virus dropping on the sheets inoculated the scratch previously existing, or whether a scrofulous bubo preceded, which was caught by contact of the contagious principle, it is not here my object to inquire, but I cite, by permission of Mr. Ricord, this case, to prove that without inoculation the case would have remained very obscure.

There is, however, another point, to which I wish to direct the attention of your readers.

"There are (continues Mr. Mayo) various objections to the production of the artificial sore, of which not the least are the length of

time necessary for its development and its intractable nature, when it has been allowed completely to manifest its character."

As Mr. Mayo has only hinted at the existence of other objections, without specifying them, of course I am unable to answer this part of the statement; if he intends to say that the practice of inoculating and producing a second sore, in order to decide upon the nature of the first, is disagreeable both for the surgeon and the patient, I am quite of his opinion; but Mr. Ricord's intention has always been to discover a sure and certain diagnostic sign, in place of the deceptive ones hitherto proposed. If future observers are enabled to propose as sure, but a less disagreeable characteristic sign, I should be one of the first to employ it by preference; but until that time I shall feel called upon to employ inoculation in the cases mentioned in my paper.

During the two years I have closely observed the practice of Mr. Ricord, I have never found that the length of time, necessary for the development of the artificial sore, could be considered as an objection to the method. That gentlemen, on the next morning, or at most on the second or third day, can satisfy himself whether the inoculation has taken effect, as the vesicle is then distinctly visible, when common pus, or gonorrhæal matter, is employed, a spot like that resulting from a flea-bite alone remains; his practice is, therefore, to cauterise the inoculated point, which is thus prevented from extending further. The same results have invariably attended my own investigation at the Oursine Hospital. It follows, from the practice just mentioned, that Mr. Ricord is not exposed to the unpleasant consequences spoken of by Mr. Mayo, viz., allowing a sore to assume an untractable nature. I defy any one to bring forward a case in which this occurred, and yet Mr. Ricord is daily in the habit of employing inoculation in the hospital, as well as on the out-patients, who present themselves in such numbers at the Hopital du Midi.

I have, unfortunately, witnessed the results spoken of by Mr. Mayo, and a case of the kind is at present in the female hospital. A physician, well known for his works on the venereal disease, denied the possibility of buboes ever secreting a virus, which would produce the pustule on inoculation. So convinced was he of this, that he inoculated freely with the secretion of buboes which suppurated. One of these, however, seemed to contradict the opinion he had previously formed, and, consequently, he allowed the pustule to proceed, in order to watch the results, apparently not convinced that he was in the wrong. The young girl, the subject of this bubo and artificial sore, previously in a weak state from privations, &c., did not (as may be supposed) improve by the additional local irritation of a very unhealthy bubo. The artificial sore took on a similar character, and it is at present as large as a five-shilling piece, and resists all attempts at destroying it, for cauterisation only irritates it, instead of curing, and causing healthy granulations at its base.

Such cases ought not to be brought forward as objections against inoculation; at the same time, it is very important that surgeons should be aware of the possibility of the occurrence. They have had the effect of strongly impressing on my mind the absolute necessity of locally destroying all chancres as soon as possible after their occurrence; for although, generally speaking, that is not absolutely necessary, still no one can tell if some circumstance may not throw his patient into a bad state of health, and then treatment, which was previously judicious, will become inefficacious, or altogether useless.

The importance of this subject, and the practical considerations it gives rise to, will, I hope, excuse the length of this letter, which, I allow, has exceeded the limits I intended; but, before concluding, allow me to resume it in propositions.

1. The secretion of chancre, or of a primary syphilitic sore, during its ulcerating period, produces, when inoculated, a series of characteristic phenomena, as constant as they are regular.

2. No other secretion will produce similar effects.

3. Inoculation, then, distinguishes chancres from all other sores.

4. When the secretion of a sore (be its physical characters those of simple chancre, benign, or malignant phagedena, &c.) produces a pustule, and subsequently a chancre, the surgeon may be convinced that it was itself produced by the contact of syphilitic virus, notwithstanding any other evidence to the contrary.

5. The surgeon may satisfy himself usually as to the nature of the pustule previous to the third day; if then cauterised, there is no fear of its becoming an intractable sore.

Your obedient servant,

W. Acton.*

No. 7, Rue de L'Université.

P.S. Since the above was written, I find, by the public journals, that the Institute of France has presented *the gold medal* to Mr. Ricord, as a proof of the estimation in which it holds his labours to advance science, and his original views of the venereal disease, founded *on inoculation*.

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* We believe that Mr. Acton has bestowed infinitely more notice on the opinions of Mr. Mayo than they merit. The papers on "Syphilis" are evidently nothing more than a dying puff; and as for the experiments on inoculation, they probably exist only on paper.—Ed. L.

SKETCH OF BICETRE.

(From a Correspondent.)

BICETRE, originally the seigniory of John, Bishop of Winchester, whence it name Vichestre, and afterwards Bicêtre, became by confiscation, the property of the French crown in the year 1294, exactly 90 years from the time of its foundation. After passing through various hands, it again became, a royal possession in 1632. During the reign of Louis XIV. a portion of the building was converted into an *hospice*, that is, an establishment consecrated to childhood, old age, and incurable infirmities, while the remainder served as a prison.

Occupying, a rising ground about half a league beyond the *barrière d'Italie*, Bicêtre overlooks a considerable tract of country, and conveys an imposing appearance, from the great extent of its façades. It is now exclusively an asylum for aged men, lunatics, and epileptics, the prison having been abandoned within the last three years.

At the commencement of the present century, when the general administration of hospitals was instituted in Paris, Bicêtre held within its walls the sturdy and the decrepit, the blind, the palsied, those labouring under epilepsy, syphilis, scrofula, mental alienation, and also children. All were huddled together pell-mell, without respect to age, sex, or infirmity. There were then 1,505 beds, where patients slept alone; 262 where they slept double; 144 with a double partition, to separate the poor lying together; 172 beds for idiots, fastened into the walls, and 126 troughs *(langes)* for those who soiled themselves; besides 33 stump-beds *(lits de sangle)* to be placed in the dormitories, as occasion required.

The beds for *four* individuals had been suppressed, as they were found to give rise to frequent quarrels, often ending in bloodshed, as were also the beds for *eight*, which had existed prior to the Revolution; in these, four of the persons slept during one half of the night, while the others watched. Such was the charity which the privileged orders exercised towards their indigent fellow creatures, prior to that memorable epoch in French history.

Since the year 1803, numerous beneficial changes have taken place. New and commodious wards have been constructed; trees have been planted; measures of cleanliness enforced, and signal improvements effected, both as regards the quality and quantity of food. A distinct edifice has been built in a remote corner of the establishment, for the reception of idiots, formerly doomed to inhabit dark and humid cells. This consists of six wards, each containing 28 beds. The upper floors are for the tranquil, while the ground-floor is reserved for such as are under direct treatment. The beds of the latter are fitted with a sort of thick oil-cloth funnel, which serves to convey away any liquid matters into a conduit communicating with a sewer outside; thus no filth is allowed to pollute the wards; indeed an air of cleanliness and comfort is visible throughout. A suitable temperature is maintained during cold weather, by means of a stove placed in the centre of each ward. In front of the building is an extensive walking-ground, ornamented with rows of linden-trees, beneath which benches are placed here and there. This ground opens into a garden, where some of the unfortunate inmates are occupied in the culture of flowers and vegetables. The class of incurables are in another division separated by an iron railing. By this contrivance a free circulation of air is ensured.

There is at present accommodation for upwards of 900 lunatics. There are 10 dormitories, containing 321 beds, while there are 66 in the wards of the infirmary. The dormitory of the convalescents contains 44 beds. There are, moreover, pavilions, presenting on two sides a range of 12 cells, for turbulent patients. Each cell contains a bed, the window being guarded by a strong iron trellis-work, so as to remove every semblance of confinement. The two ends of the square court, which serves as a walking-ground during the day, are closed by an iron railing. Formerly the unhappy individuals of this class were congregated together in a single ward, so as not to disturb the nocturnal repose of the other patients; the consequence was, that they frequently broke loose and inflicted the most deadly blows upon their companions, ere assistance could be procured. The beds for the epileptics, amounting to 100, are placed in a distinct compartment. A spacious and commodious room has been set apart for baths and *douches*, an important part of the treatment.

The practice of chaining lunatics, with the view of restraining their violence, and guarding them more securely, formerly general throughout the madhouses of Europe, is now discontinued. Mons. Pussin, an inspector at Bicêtre, distinguished for his zeal, intelligence, and moral courage, was among the first who contributed to effect a revolution at once useful and humane. Complete success was the reward of his efforts. The fury of the maniac abated instead of augmenting, when his fetters were removed; and now he can be kept under, even in his wildest paroxysms, by means of a common strait-jacket *(camisole etroite)*. With its aid he can, moreover, be fixed to the bed, without the necessity of cording his limbs, as was the usage. In the majority of cases, temporary seclusion, transferrence from one court into another, or from a dormitory into a cell, the expectation of seeing their relations, or of being restored to them,

the promise of being employed in the service of the establishment, or setting them to work, is generally sufficient to repress and quiet them. The cold *douche* applied to the head, by a column of water, of from two to five inches diameter, is a powerful means of quelling the refractory. We once had an opportunity of witnessing its effects, at the Salpetrière, a corresponding institution for female lunatics. A woman, labouring under frenzied delirium, was placed in the bath, and no sooner had the *five-inch pipe* began to work, than a brief shudder, followed by a calm, succeeded. We heard it stated by M. Leuret, one of the physicians to Bicêtre, and who had shortly before tried the *douche* upon his own person, that the first sensation is that of a sudden check to the respiration.

In a visit we recently paid to this vast establishment, we were struck with the great advantages it offers as a receptacle for the insane. Although perfect security prevailed, yet nothing could be detected indicative of coercion; with the exception of a few unruly patients recently entered into the admission ward, wearing the *camisole* or strait-jacket. In the principal refectory, adjoining the promenade-ground, some were walking about, while others were sitting in groups. At one of the tables was a party singing, in pretty harmonious chorus, the beautiful revolutionary air "La Parisienne." On entering the precincts of the cells set apart for convicted felons, acquitted on the plea of insanity, we were accosted by a hard-featured man of hirsute appearance. He had assassinated his wife. He talked incoherently about liberty, and complained of the hardship of being shut up for eleven years. Shortly after he rejoined his companions, who were eagerly engaged at pitch-farthing, or some such game. They were eleven in number.

On pausing for a moment opposite the *grille*, which bounds one side of the quadrangle of the incurable maniacs, those whose darkened intellect no future ray will ere illume, several of them rushed forward. One more particularly caught our attention. He was attired in a tattered frieze great-coat, and an old straw-hat, with the brims turned up to resemble that of a field officer, and "the humour of forty fancies pricked in it for a feather." Strutting forwards with an air of assumed dignity, "Je suis le bon Dieu," he said; but on a sudden, as if correcting himself, "Non—je suis le fils de Napoleon, et je vous passerai en revue un de ces jours au Champ-de-Mars."

We understood that about one-fourth of the whole number here are idiots—the remainder are for the most part those whom exalted ambition thwarted in its attempts, religious fanaticism, sharp misery, or disappointed love, has bereft of reason.

The general treatment consists in tranquillizing measures, and steady employment at some useful occupation, with suitable exercise in the open air. The refractory are controlled as above described. The medical treatment is limited to depletion, baths, and *douches*.

THE LANCET.

London, Saturday, January 4, 1840.

A DEPUTATION from the *British Medical Association* had, last week, an interview with the Marquis of NORMANBY, her MAJESTY'S Secretary of State, on the subject of Medical Reform, with the view of urging upon the Government the importance of that great question, and of ascertaining whether the Ministry would undertake to introduce, in the ensuing Session of Parliament, any measure for the redress of the grievances of the Members of the Medical Profession, or for placing the medical institutions in harmony with the other well-organised institutions of the country. The results of this interview will be known shortly.

The letters of Messrs. LIVINGSTONE and A. WEBSTER, the Secretaries of the *Eastern Medical Association of Scotland*, and of Mr. CARTER, the Secretary of the Committee of the *North of England Medical Association*, show that the healthy spirit of Reform is pervading every part of the kingdom; and, as might have been anticipated, it will be found, that the reform of the medical corporations, and of the abuses of the present system, is most loudly called for in those districts where the medical practitioners are the most intelligent, and where medical science is most assiduously cultivated.

At the present juncture it might not be unprofitable to take a rapid review of the present state of the Reform question. The meeting of Parliament is approaching; and we would urge, in the strongest manner, every medical practitioner in the country to see his representatives in Parliament, to explain the grievances under which the Profession labours, and to point out the

necessity of introducing liberality and justice into the administration of medical affairs. The redress of grievances, which are peculiar to a class of individuals, can only be obtained through the Imperial Legislature. It is the duty of the oppressed, the parties immediately interested, to make their griefs known to the Members; and this can only be effected, in the present case, by personal interview and explanation, for medical matters are not generally understood by M.P.'s, as they have rarely been discussed in Parliament. Parliamentary Reform, the Reform of the Municipal Corporations, Law Reform, Church Reform, convey comparatively definite ideas to the general reader—they have all occupied the attention of the Government; but Medical Reform has been buried in strange oblivion, as if the public health were a matter of utter indifference, and below the notice of legislators. The Medical Profession has been left to groan under the injustices and oppressions of self-elected Corporations, from which other classes of citizens have been relieved; and indifference, disregard, or indirect injury, through the Poor Law Commission, have done much to alienate the affections of 20,000 active, intelligent men from the Government. Lord NORMANBY, however, has engaged to bring the question formally before his colleagues. Let us hope that the intelligent Nobleman, who was the first to break through the immemorial prejudices which surrounded the Castle of the Lord Lieutenant in Dublin, will be the first to do justice to the Medical Profession in the United Kingdom.

The knowledge of diseases, of the laws which they observe, and of the changes to which they give rise in the body, constitutes the basis of medical science. The external elements, mechanical appliances, and chemical agents, are its instruments. The prevention and cure of sickness, and the diminution of human sufferings, are its great objects. Medical science is, therefore, essentially indivisible; the structure, functions, and diseases of one limb, one organ, or one part, whether external or internal, can only be understood by reference to the whole. Crush or puncture the joint of a finger, and the brain, the heart, the entire organisation, will be thrown into disorder. A local ulcer can be healed by general constitutional treatment. The great majority—99 of 100 practitioners—have to treat external and internal affections indiscriminately; they have also, in many instances, to dispense as well as prescribe remedies. The surgeons of the Army and Navy treat diseases, perform operations, and compound medicines; in the Peninsular War not more than one-fourth of the deaths were the consequences of wounds; and of 22½ per cent. of men constantly sick, and requiring medical attendance, little more than 1½ per cent. had diseases which are vulgarly designated "surgical."

In France and in Germany the graduate is examined in, and licensed to practise, medical science; in the United Kingdom, he is examined only in pharmacy or in surgery, or in the treatment of internal diseases (called "medicine"), by separate colleges and companies. The division of labour in large cities is advantageous in medicine, as well as in the arts; but medical science cannot be cut up into sectional parts. And the dismemberment of the Profession, or the division into three corporations (separated by unintelligible lines of demarcation), is as unnecessary as it is injurious for the purposes of medical government and discipline. Medical Reformers, therefore, while they deprecate any legislative interference with education, or with the right of individuals to practice any part of medical art in any manner they please, insist that the examination should embrace the whole scope of medical practice; that the license should be uniform; and that it should confer the right to practise medicine in every part of the British Empire.

Some confusion prevails as to the extent to which the Legislature has a right to interfere between the patient and the practitioner. It is certain, that every man

has an abstract right to practise any wholesome art he pleases; but no man has a right to deceive, injure, poison, or mutilate the people; and, as medical skill cannot be always judged by the event of individual cases, nor always be distinguished from impudent, wicked pretensions, by the public, it is admitted by all writers on law and politics, that it is the duty of Government to see that every medical man into whose hands the life of any member of the community is committed, at any one time or other, possesses a competent degree of professional capacity and acquirement. Reformers have not to complain of the want of enactments on this head, for the principle was recognised so early as the reign of Henry the Eighth; but it has, unfortunately, been carried out inefficiently, partially, corruptly, and has been made a ground for the grant of injurious monopolies, to which the public interests and the great mass of the Medical Profession have been equally sacrificed.

The slightest attention to general principles will show, that the Legislature has no right to interfere, nor to confer upon any Corporation the right to interfere, with the freedom of medical education. What right can any one have to prescribe the place, mode, or period of study, in any department of the science? And experience has proved that this interference, so often and injudiciously attempted, invariably produces vexation, interrupts the student's natural order of study, and damps the zeal and competition of teachers, while it fosters unjust monopolies—the object, it must be confessed, at which its originators primarily arrived. It is for the public convenience that the sovereign should be stamped; but would it not be madness, in a government, to pretend to prescribe a definite course for procuring, working, and refining the gold which is required for the currency?

It follows, as a necessary corollary, that Medical Reform will not directly affect the medical schools, the scientific societies, or the universities; but that it will bear exclusively upon the license to practise. Every practitioner must have the license, which will render the possessor eligible to all public appointments, whether in the hospitals or the public service, and entitle him to practise every department of medicine. Authentic official lists must be prepared, and published periodically, so that the public may have a ready means of ascertaining the legal qualification of practitioners. There are Law Lists, Army Lists, Navy Lists; and the Government goes to the expense of advertising "Game Lists" in the newspapers, for the public information, and out of compliment, we presume, to the country gentlemen, who preserve their game with more jealousy than their lives, not to say their wives, and while they scare the unqualified with spring-guns from their covers, give the empirical poacher easy access, and permit him to practise "medicine" on their bodies, and in their families, with impunity. If country squires and country members can be prevailed upon to put on their nightcaps a little less frequently, to wear their considering-caps for a single hour, and to lose a little blood before they come to town, they will perceive that this is a case in point, and yield to the irrefragable arguments of our brethren in their neighbourhood.

Candidates for practice will then, under a rational plan of Medical Reform, undergo a uniform series of examinations—medical education will be free from restrictions—a healthy competition will be maintained in the schools—the public will be able easily to detect unqualified practitioners—quacks will be punished as well as detected—and the Medical Profession will constitute a National Faculty, or one Corporation, with a representative, responsible Council. The Council would nominate examiners, and expend the money derived from the fees,—which, at a moderate estimate, and at the present rates, would amount to £30,000 a-year,—in maintaining the interests of the members, investigating the public health, promoting science, collecting museums,

establishing libraries, founding lectureships, where all the higher and more philosophical parts of medical science could be discussed and demonstrated. Microscopes, chemical apparatus, mechanical appliances, preparations, drawings, would be provided; and the practitioner would have an easy way of making himself acquainted with new discoveries, and of thus keeping on a level with the progress of science. If any extraordinary fact came to light, or any critical question in medical jurisprudence or medical police arose, or the country were threatened with an epidemic, or any difficulty occurred in practise, or any serious difference happened among practitioners, committees appointed by the Councils might institute inquiries, and decide upon the course to be recommended or pursued. At the same time the Government could refer, with confidence, to the National Faculty in either of the three divisions of the kingdom, and the public and the Profession would be satisfied with their decision.

At another time we shall give a summary of the defects, abuses, and corruptions of the present medical Corporations; and show that the law, as it at present stands, is not merely useless, but infinitely injurious.

Gatherings from Grave Yards; particularly those of London: with a concise History of the Modes of Interment amongst different Nations, &c. &c. By G. A. Walker, Surgeon. London: Longman and Co., 1839. 8vo. pp. 258.

The interment of the dead in the midst of the living may be considered under two points of view—the moral and the medico-political. The former has been already discussed in two successive numbers of this Journal, we shall, therefore, in our present examination of Mr. Walker's book, consider chiefly the question of interment in its relation to public health, and endeavour to place before our readers, as concisely as possible, the different facts which Mr. Walker has collected, to prove that the practice of intra-mural sepulture is as injurious to the health and well-being of the community, as it is offensive to the feelings of every moral and well-thinking man.

The treatise of Mr. Walker, on the grave-yards of the metropolis, is divided into four principal parts or sections. In the first, the reader will find a learned and instructive account of the modes of interment amongst different nations, from the time of the Jews and Egyptians to the present epoch. Inhumation in towns was forbidden by the Roman law, and by the codex of Theodosius and Charlemagne. As the power of priestcraft, however, increased, not only cities, but even churches and other holy places, were defiled by interment; and in France this was carried to such a pitch, that the parliament was compelled to pass an edict, which enjoined the closure of all cemeteries and churchyards in the city of Paris, and strictly forbade any future interment within the walls of the capital. This edict was farther enforced by several royal decrees, which afterwards appeared, and the dead of Paris (a city inferior by one-third only in population to London,) are now buried without the walls in four magnificent cemeteries. Let us hope, that we shall not much longer neglect to follow so wise an example.

In the second division of his work Mr. Walker adduces a number of facts and experiments, for the purpose of demonstrating the dangers of inhumation in churches and within cities. Several of these facts are taken from Vicq d'Azyr's translation of a treatise, by Dr. Piattoli, on the danger of interment; others are the fruit of Mr. Walker's industry and personal observation; to the latter, therefore, we shall more particularly direct our attention. There can be no doubt but that putrid exhalations, from dead bodies, in a concentrated degree, produce highly injurious and even fatal effects on the living subject. Upon this point Mr. Walker furnishes abundant and convincing testimony:—

"Ramazzini relates that a sexton, having descended into a grave to strip a corpse which had recently been deposited there, was suffocated, and fell dead upon the spot." (p. 108.)—"Workmen were digging vaults in the church af St. Eustache, in Paris, which compelled them to displace some bodies, and to place those which came afterwards in a vault which had been long closed. Some children, who went to catechism in the place, were taken ill there: several adults also were similarly affected

Dr. Ferret found the respiration of the patients difficult, the action of the brain disordered, the heart beating irregularly, and in some convulsive movements of the arms and legs." (p. 111.)

But it is unnecessary to travel abroad for authorities, when we have abundant examples at home. The melancholy occurrence in Aldgate churchyard must be fresh in the memories of most of our readers. A grave-digger named Thomas Oakes, and a young man named Luddeth, were both instantaneously deprived of life by the emanations from a pauper-grave in this churchyard, in the month of September, 1838. The concentrated exhalations of the dead body are, therefore, sufficiently noxious to produce the sudden extinction of human life. When mixed with a considerable quantity of atmospheric air their deleterious influence is of course modified; but, according to the testimony of Mr. Walker, not less certainly exercised. The following are examples:—

In the month of June, 1825, a woman died of typhus fever, in White Horse-yard, Drury-lane. The body was buried on the *fourth* day after death. A man residing in the same house, in whose room the coffin had been placed for a few minutes, complained soon afterwards of a peculiar coppery taste, and was seized with a very severe form of typhus fever.

A patient of Mr. Walker, exposed to a similar influence, was instantly affected with giddiness, prostration of strength, extreme lassitude, and experienced a peculiar metallic taste in the mouth, which continued for some days.

The Author's assistant entered the vaults of St. ——— church, for the purpose of obtaining some gas from one of the coffins. The instant the small instrument employed entered the coffin, a highly offensive gas issued forth, and the young man was instantly seized with a suffocating difficulty of breathing. He had giddiness, trembling, vomiting, a variety of nervous symptoms, and was confined to his bed for seven days; the man who accompanied Mr. Sutton was affected in a similar way.

The sexton of a church in Herts, who opened a vault which contained the body of a child placed there fifteen months previously, was instantly affected wth nausea, followed by diarrhœa, excessive trembling, and loss of strength; the bricklayer and labourer were also affected.

"In the summer of 1757, five cottagers were digging on the heathy mountain above Eyam, in Derbyshire, which was the place of graves after the churchyard became a too narrow repository. These men came to something which had the appearance of having once been linen; conscious of their situation, they instantly buried it again. In a few days they all sickened of a putrid fever, and three of the five died. The disorder was contagious, and proved fatal to numbers of the inhabitants." (p. 136.)

Many similar examples, which fell under Mr. Walker's more immediate observation, are detailed in this section of the work. They are related with the earnestness and force which profound conviction of the doctrine advocated alone can give. In reference to these facts, it were the duty of the medical critic to examine and well weigh the testimony adduced by the Author; to compare his statements with others of an opposite tendency, and endeavour to arrive at a conclusion, after a cool and impartial examination of this most important question. From this difficult task we are relieved by the recollection, that the subject of emanations from the dead body has been already investigated in a former volume of this Journal, and to it we refer our readers for ample information.

In the third section of his treatise, Mr. Walker takes a rapid view of the state of the principal burying-grounds in the metropolis. The loathsome scenes, which a sense of duty compels him to disclose, are enough to excite the disgust of the most apathetic, and their exposure must, sooner or later, have the effect of working out the salutary reformation, for which Mr. Walker has laboured with such praiseworthy diligence, energy, and talent. We select the following passages for quotation:—

"I may advert to the burial places in my own immediate vicinity. The 'Green Ground' in Portugal-street, has been used for interment for a period 'beyond the memory of man.' Enormous numbers of dead have been deposited here, and yet the ground remains persistently level. It would be desirable to obtain an account of the number; no doubt, the particulars are on record, and could be furnished, of the burials within a given period. Should it appear that the ground has been overcharged, information should be given of the disposal of the earth —necessarily removed, to admit the continuous deposits. Bulk must occupy space.

If removals of previous occupants should occasionally have been effected, it would be desirable to know, by what authority?—at what period since the inhumations?—and under whose immediate sanction these transfers have been made? The general question might be asked, where have the remains of those removed been deposited—in what manner have the materials of which the coffins were made been used or appropriated? Unfortunately, it has long been notorious, that through the criminal neglect of survivors, the most disgusting violations of the dead have commonly passed off unnoticed and unpunished. On the surface of many grounds I have repeatedly seen coffin wood piled up for removal, and I could not refrain from wondering that this barefaced insult to the living, necessarily preceded by a disgusting exposure, and, too frequently, dismemberment of the dead, could have taken place with impunity, and that the perpetrators of these acts should escape unpunished. But these men, for necessity may have compelled them to the employment, are comparatively innocent. The abuse—the criminality of the act rests with those who superintend or connive at the transgression.

"The above remarks are applicable to a vast majority of places I have examined, and of which I have not considered it necessary to detail the particulars. They indisputably prove that the present system of inhumation, and it is not confined to the metropolis, is grossly immoral, and demands —imperiously demands, the interference of the Legislature to abolish or reform it. It might appear invidious to have selected the burial ground in Portugal-street, for particular remark; I have no intention to make this place the ruling theme of observation, because I am quite prepared to prove, that it is not an isolated instance; nor do I believe that it is a particular exception. It first occupied my attention in my professional inquiries, and I regret to find that it is but a specimen of the almost universal practice. The grounds in Russell-court and Drury-lane—the former belonging to St. Mary-le-Strand, and the latter to St. Martin's-in-the-Fields, — are excessively crowded with the remains of the dead—more especially that in Drury-lane—luxuriant in rank vegetation high as men's shoulders—its surface broken, uneven, and its general aspect repulsive. It is a shabby, unchristian depository for the dead; an abomination to the living."

The condition of many grave-yards in the metropolis would furnish, we fear, the same disgraceful spectacle. Mr. Walker has personally examined the principal burying-grounds, and shown, in the clearest manner, that thousands of bodies are annually interred in places which are barely calculated to contain as many hundreds. The effects of this on the *morale* and *physique* of the surrounding population, are vividly depicted by the Author. We recommend the general reader to meditate on them. With this recommendation we close our notice of Mr. Walker's treatise. It is in every respect a remarkable production, and reflects the greatest credit on the qualities of his head and heart. Notwithstanding the labours of an extensive general practice, Mr. Walker has found time to investigate a subject of very great importance to the health of the public; he has succeeded in the work now before us, in awakening an unusual degree of public attention to the subject of intra-mural sepulture; and, we trust, that Mr. Walker will not weary in his well-doing, but continue his exertions until this blot be wiped away from our national character.

BRITISH MEDICAL ASSOCIATION

INTERVIEW WITH LORD NORMANBY.

On Friday last a Deputation from this Association had an interview, by appointment, with the Right Honourable the Secretary of State for the Home Department, at Whitehall, when his Lordship heard, with great attention, the statements of the Deputation, relative to the legislative reforms which were required in medical law in these kingdoms, accompanied by an explanation of the objects of the Association. The noble Marquis subsequently promised to communicate immediately with his colleagues on the subject, and to receive the Deputation again on some day before the assembling of Parliament, when he will announce to them what are the views entertained, generally, by the Cabinet on the question of medical reform.

WESTMINSTER MEDICAL SOCIETY.

Saturday, December 21, 1839.

Dr. Chowne, President.

INJURIES OF THE HEAD PRODUCING A TENDENCY TO SUICIDE.—DEMONSTRATION OF A NEW SET OF MUSCLES. — COMPARATIVE EFFECTS OF OPIUM AND ALCOHOL AS INTOXICATING AGENTS.

The following communication from Dr. Mantell was read by the Secretary. The author had sent it to Dr. Johnson, with a request that it might be read be-

fore the members in reference to the late discussion on suicide:—

"In the extensive medical practice in which I have been engaged during the last twenty-five years, many cases of suicide have come under my notice, in which the mental hallucination which led to self-destruction has depended on lesions of the brain, occasioned by slight or neglected injuries of the head, to which neither the patient nor his friends attached any importance. In several instances of self-destruction, without any assignable moral cause, and in which no previous signs of fatuity or insanity were manifested, I have found, upon a post-mortem examination, either circumscribed induration, or softening of the brain, or thickening and adhesions of some portions of its membranes. The conviction was forced upon my mind, that very many of the *so called* nervous or hypochondriacal affections, which are generally considered as imaginary, and dependent on mental emotions, are ascribable to physical causes, and frequently originate from slight lesions of the brain.

"The following case, selected from many of a like nature, is respectfully submitted in illustration of these remarks:—

"A respectable tradesman, between 50 and 60 years of age, of temperate habits, was knocked down during an electioneering contest, and struck his head on the ground; he was stunned for a few minutes by the shock, and slightly bruised above the right temple, but experienced no further inconvenience, and the circumstance was considered of no consequence.

"About six months after this event he was seized one evening with rigors, and a pain over the right brow; a smart reaction took place, which terminated in perspiration, and the following morning the symptoms disappeared. A similar paroxysm came on daily for five or six days; the attack was considered intermittent, and I believe, bark was freely administered; at the end of a week the patient was well. After this period he was subject to occasional pain over the right brow, accompanied with great mental despondency, the prevailing apprehension being that of eternal damnation. This state would continue for an uncertain time, the duration varying from a few days to three weeks, and by slow degrees he would lose all trace of disease, regain his accustomed cheerfulness, and be able to transact the affairs of an extensive business.

"About two years from the occurrence of the accident, I saw him, at the request of his friends, while he was labouring under great despondency, which his relations assured me arose from some religious opinions he had imbibed, and I found that the medical treatment had been in accordance with such a notion. My inquiries led to the detection of the injury he had received two years previously, but neither the patient nor his friends would allow that there was any connection between the blow and the symptoms under which he now suffered. Both general and local bleeding appeared to me necessary; a strict regimen was adopted, and he regained his usual flow of spirits, and expressed himself better than he had been for years. The occasional use of leeches, and a rigid abstinence from fermented liquors, spirits, and stimuli of all kinds, maintained this favourable condition for a considerable time; but his occupation led him to occasional excess in diet, and a moderate quantity of wine or beer invariably brought on despondency and its accompanying hallucination; in other words, when the system was kept in a tranquil state the cerebral functions were not impaired, but when excited, the morbid manifestations of the mind were produced.

"During one of these attacks he cut his throat, and expired in the course of a few hours. A short time previous to his death, when greatly exhausted by the loss of blood from his wound, his intellect was unclouded, and he expressed to me his astonishment at what he had done, and assured me he had no reason for acting thus, but it was an impulse which he could not resist.

"The only abnormal appearance, upon inspecting the body after death, was a circumscribed adhesion of the dura mater to the pia mater, to the extent of about two inches in diameter, over the upper and anterior portion of the right hemisphere of the brain, opposite to the spot where the blow of the head had been inflicted some years previously.

"I will not, sir, presume to offer any comment on a case which I am well aware presents nothing unusual, my only object being that of calling particular attention to those slight injuries of the head, which, although unmarked by any striking symptoms at the moment of their occurrence, may give rise to the most distressing results years after their infliction, and when the original cause of disordered action is forgotten, and can no longer be detected; and of pointing out the possibility that many cases of suicide, apparently referrible to moral causes only, may be found to result solely from physical derangement of the organ through which the manifestations of the mind must be displayed. It is under circumstances of this kind that the medical philosopher, in his painful duty of exploring the relics of mortality, may have the high gratification of protecting the memory of an unfortunate individual from the censure of a world but too apt to judge harshly, and thus afford a lasting consolation to those by whom that memory will be cherished and revered."

Dr. JOHNSON, in corroboration of the fact

that persons committing suicide occasionally recovered their senses before death, stated, that Sir Samuel Romilly, after having cut his throat, made strenuous efforts to suppress the hæmorrhage by attempting to press a towel into the wound.

Mr. STREETER had met with such cases as that alluded to. A man stabbed himself seven times with a clasp knife, without fatal effects. He came next day to him, Mr. Streeter, to have his wounds dressed, and then expressed surprise that he should have ever been induced to attempt his life. After death, where disease of the brain was found to exist in suicides, it was a presumptive proof that insanity had impelled them to self-destruction.

DEMONSTRATION OF THE PROPER ROTATORS OF THE INDIVIDUAL VERTEBRÆ OF THE BACK.

Mr. URE brought before the meeting a dissection which he had made, exhibiting the *rotutor* muscles of the dorsal vertebræ, lately discovered by Professor Theile, of Bern, and which he was not aware had been heretofore demonstrated in this country; the dissection was accompanied by an illustrative drawing. He observed, that they were situate beneath the multifidus spinæ, and extended, in an oblique direction, from the transverse process of one vertebra to the lamina or arch of the vertebra immediately above; they were generally 10 or 11 in number, disposed symmetrically along each side of the spine, separated from the fibres of the multifidus spinæ by a layer of cellular tissue; they were largest in size about the 8th, 9th, 10th, and 11th vertebræ, that is, where the rotation of the dorsal spine is at its maximum. They had been detected in various mammalia: among the *quadrumana*, in the *iacchus penicillatus;* among the *ferae*, in the brown bear, the dog and cat; among the *rosores*, in the rat and Aguti; but no trace of them had been met with in the *pachydermata, ruminantia*, or *cetacea*. After pointing attention to the fact, that, in the instance of the *ferae*, these rotator muscles were uniformly attached to the true dorsal vertebræ only, or those which have distinctly the power of turning upon their axis; he propounded as an object of inquiry, to ascertain whether or not these muscles, acting as they manifestly did upon the dorsal vertebræ individually, had any influence in determining the unnatural state of rotation of the dorsal spine, which occurs in cases of lateral incurvation?

MR. DOWNING read a paper on the comparative effects of opium and alcohol, when habitually consumed.

The object of the author was chiefly to point out the injurious effects which opium taken habitually, either by being swallowed or by inhalation, exerted upon the physical and mental energies. With this view, he advanced a great number of facts from the works of various Eastern travellers, the accuracy of whose descriptions he had been able to verify by personal observation. It is unnecessary here to give the often-repeated catalogue of evils which beset the habitual consumer of opium. With reference to the comparative effects of opium eating and spirit drinking, the author remarked, that they resembled each other in many respects, as would at once be perceived; the points in which they differed, however, were not so perceptible to ordinary observers. They both stimulated the nervous system to an unnatural degree, and when the pleasurable sense of excitement was over, they both left a relaxation of the nervous system, and an undue depression of both the bodily and mental powers. They both disordered the digestive functions, predisposed to other diseases, and materially shortened the period of life. In order to keep up the same degree of excitement, a greater quantity of each must be used, the oftener it was indulged in; so that, if once the appetite were formed, constantly increasing indulgence was necessary, and almost inevitable. The desires were the only standards for estimating quantity. They both stupified and deranged the intellectual powers, and debased the moral attributes. All the injuries inflicted by alcohol, however, the author considered were increased in a tenfold degree by the use of opium. In one, there was a limit to the quantity taken; in the other, the quantity was unlimited. The spirit drinker had some short intervals of repose; the swallower of opium none, his being a life of perpetual excitement. In one, the habit might be broken off—many a drunkard had been cured of his propensity to intoxication; but there was scarcely one known instance of escape from the toils of opium, when once they had firmly enveloped a man. Opium eating, he believed, was increasing in this country.

Mr. RUTHERFORD ALCOCK believed that there was no essential difference between the effects of opium and alcohol, as used habitually. They might be considered merely as offering a variety in the stimulus applied, the only difference, if any difference did exist between them, being in the intensity with which they acted. In a case which had come under his observation, a man, who had contracted the habit of opium eating, was detected stealing a quantity of the drug out of the shop of one of the military hospitals, to which he (Mr. Alcock) was attached. Being anxious to cure the man of his propensity to swallow opium, he placed him under constraint with this view; the withdrawal of the usual stimulus produced precisely the same effects as though the stimulating agent had been alcohol, viz., delirium tremens. On the second day, he

found it necessary to administer a dose of opium, which removed the state of mania. The opium was gradully diminished in quantity, and at the end of a fortnight, two grains taken at night, had as much effect in soothing the patient as had two drachms previously. During the last two or three days of his confinement, the man was in a remarkably debilitated state, and fears of his life were at one time entertained. If this patient had been debarred from spirits—had he been an habitual drunkard—would not the same effects have resulted, and would not the treatment employed in this case—the administration of the usual stimulus—been that most likely to have been of benefit?

Dr. JOHNSON did not agree with the last speaker, that opium acted merely as a stimulant. What would be the effect of a glass or two of grog in relieving the pain of toothach, compared to that resulting from thirty or forty drops of laudanum? Look at the kind of intoxication produced by spirits or wine, the party were quarrelsome, bustling and noisy, so contrary to the effects which were produced by opium. When the opium smoker had taken in his whiff, he sate as still as marble for four, six, or eight hours, apparently in the deepest reverie; this was not the case with wine. With reference to the increased consumption of opium in this country, he might mention that the insurance offices had found that the sale of opium had increased in a direct ratio with the increase of teetotalism. Some measures were about being adopted for the purpose of gaining more accurate information on the subject.

Mr. G. SMITH had known the case of a man who took two or three drachms of opium in the day. With the view of getting rid of so pernicious a habit, he was recommended to try some other narcotic. He used extracts of hemlock and henbane instead, but it was found that he could not bear either of these in larger doses than those in ordinary use. On one occasion having got his opium, which was probably stronger, from a new source, he swallowed his usual quantity, and slept over one entire day without being aware of it.

A MEMBER considered, that there must be a difference between the effects of opium and alcohol, inasmuch as the latter could not be substituted for the former with any effect, by those persons who were in the habit of eating opium. Opium eaters were occasionally drunkards also; but, however much they might drink, they always required their usual dose of opium. In one instance he had known, spirituous liquors took much less effect upon an opium eater than it did upon other persons.

Mr. WINSLOW would not rely on the accounts of travellers with reference to the effects of opium eating on the inhabitants of the East. Dr. Burnes had declared that he never saw any of the more severe effects which other writers had enumerated. He, Mr. Winslow, did not believe that opium was so injurious as many asserted. With reference to its increasing consumption in this country, he could only observe, that we had no statistical evidence to show it. He was more inclined to attribute great mischief to the habitual use of spirituous liquors than to the constant employment of opium. We were not without statistical evidence to prove the injurious effects of spirits. Dr. Gordon had declared that 70 per cent. of the cases admitted into the London Hospital had their origin in spirit drinking. Two-thirds of the cases of insanity which occurred, might be traced to the same source. Out of 495 insane persons in the Liverpool asylum, 257 owed their insanity to drunkenness. In the Richmond Hospital, Dublin, out of 286 cases, 185 arose from drunkenness. How very rare was it for opium eating to produce mania! He gave the palm to intoxication by alcoholic fluids, in the amount of the production of evil.

UNIVERSITY COLLEGE HOSPITAL.

STONE IN THE WINDPIPE.—TRACHEOTOMY.—BRONCHITIS.—RECOVERY.

A LITTLE boy, named Downes, five years of age, was admitted on the 2nd of November, under the care of Mr. Liston. At half-past eleven, P. M., he was playing with his companions, and, while laughing heartily, he swallowed a small white stone, which passed into the trachea—half an hour afterwards he was brought into the hospital. He was breathing with difficulty, the breathing was accompanied by a constant cough. On application of the stethoscope to the throat it gave the idea that something was suspended in the trachea; at each expiration again retracted; there was a loud sound in the trachea. Mr. Liston was sent for. The child continued to suffer from great difficulty of breathing, accompanied occasionally with violent paroxysms of coughing for an hour, when the breathing became suddenly natural; but on the application of the stethoscope a loud sonorous rattle was heard opposite the division of the trachea; the respiration was loud and sonorous over the upper part of each lung. Mr. Liston arrived at a quarter to two, and immediately decided upon performing the operation. An incision, an inch and a half in length, was made, its lower extremity reaching to within half an inch of the upper part of the sternum; the skin and other parts, down to the trachea, being divided. Great hæmorrhage took place from a divided vein, and so obscured the view of anything at the bottom of the

wound, that it was sometime before the trachea was opened; the bleeding was much increased by the violent cries of the child: a hook was passed between the rings of the trachea, which were pulled forwards and divided, notwithstanding the bleeding, which was very copious.

The child was then placed with its head downwards, and began to expire through the opening in the trachea. Shortly afterwards the foreign body was expelled from the wound and proved to be a roundish piece of glass, about the size of the little finger. It was a pebble, a piece of rock crystal, cut for setting in a seal. Shortly after the operation the child ceased to breathe through the artificial opening. Warm water dressing was, therefore, applied, and the little patient soon sunk into a tranquil sleep.

7, P. M. The child breathes naturally; pulse 130—140; skin dry and hot; some thirst; the child is not at all restless; respiration is natural, though, perhaps, a little loud over the whole chest. To have two grains of calomel every two hours, and six leeches to be applied to the chest.

Nov. 3, 2 A. M, The pulse is still 140; he has been sleeping tranquilly, and is not at all restless; his bowels have been freely opened.

10, A. M. His bowels have been again opened; his pulse 150; there is some slight fœtor of the breath; considerable thirst; great heat and dryness of the skin. Six more leeches to be applied; omit the calomel, and let him have one-sixteenth of a grain of tartar emetic, and one-eighth of a grain of powder of ipecacuanha every two hours.

4, P. M. Pulse 180; fœtor of the breath; tongue coated; skin very dry; venesection to nine ounces. Vomiting occurred shortly after the bleeding, and the child fainted for some time.

4. He has had some sleep during the night, and has been tolerably composed. This morning his pulse is 180; some thirst; skin dry. A good deal of sonorous sound over the left lung. At 3, P. M., he was in the same state; pulse still 180. He was cupped to four ounces over the back. He has continued the antimony and ipecacuanha since the morning. His skin is tolerably cool and moist.

5. Has slept pretty well during the night; he suffers no pain, and breathes more easily; he has not breathed through the wound in the trachea since the operation. A piece of lint, that had been dipped in hot water, had been constantly applied over the orifice to prevent the entrance of any cold air into the lungs. There has been no attempt made to bring the wound together. There is less heat, and more moisture of the surface; the lips are less dry and parched; thirst less; pulse 170, but less full and very compressible; less sonorous sound over the right lung, but there is both sibilant and mucous râle over the upper part of the left lung. He has continued the antimony and ipecacuanha every two hours. A small plaister was applied to the upper part of the sternum.

6. Pulse 160; very compressible; not much thirst; less sound over the left lung; expectoration has commenced; medicine continued.

8. Pulse still 160, but compressible; there is a sonorous and sibilant sound over both lungs, but more over the right than the left; thirst; skin still dry. Six leeches to the chest.

9. Pulse 140; less thirst; mucous rattle in the chest; expectoration more free; the wound is beginning to contract, but has still a sloughy appearance.

10. Pulse 120; very compressible; not much thirst; a good deal of anemia; mucous rattle over the chest.

11 and 12. Much the same.

14. Pulse, natural; no thirst; still some mucous rattle, but very little cough or expectoration. To have a cough mixture of antimony, ipecacuanha, oxymel of squills and syrup of poppies.

16. From this date gradually improved, and was discharged a few days ago.

In some clinical remarks on this case, Mr. Liston observed, that the operation of tracheotomy was frequently more embarrassing and difficult, than it appeared, or was represented to be. It had been stated by some writers, that the hæmorrhage was occasionally so great that the operation could not be proceeded with, for fear of the blood getting into the trachea. In the present case he had not waited for the cessation of the bleeding, seeing that it was evidently kept up by the embarrassment of the breathing, the veins in the neighbourhood being thus kept gorged. The result showed that the opinion was a correct one, and justified the proceeding. The bleeding ceased instantly on the escape of the foreign body, and on the breathing becoming tranquil. In cases where the body was smooth, and of no extraordinary size, as in this instance, it seldom became entangled for any length of time in any situation, and was expelled, in general, almost immediately on a sufficiently free opening being made in the windpipe. A foreign body of a certain size could enter the rima glottidis readily enough during inspiration, the opening being there dilated, but from spasmodic action upon its being forced up into the larynx, it could not escape, except with much difficulty. This had sometimes happened, even after the unsuccessful operation of bronchotomy had been performed. Patients suffered from great agony, from the presence of even small and smooth substances in the windpipe, and the seeds of fatal dis-

case were, from this cause, often left. It was always proper at once to attempt the removal of foreign bodies from so sensible and vital an organ. In general no difficulty was experienced, there being no occasion for searching for the foreign body to extract it. Occasionally, however, and where the substance was of considerable bulk, it was arrested in the larynx. It lay, perhaps, in one of the ventricles, or was somehow entangled in the rima, or by the vocal chords. Again, the foreign body of irregular fissure sometimes fell down, and lodged permanently in one of the bronchi, generally the right. Its presence there might be ascertained by the physical signs. Then, indeed, some difficulty might be experienced in its removal. Mr. Liston referred to a case, the only one he believed in which a foreign body had actually been grappled with and removed from the right bronchus during life. It was operated upon by himself in the Edinburgh Royal Infirmary, and was related in this Journal, vol. ii. 1833-34, p. 419, and in his "Practical Surgery," p. 371.

FALSE ANEURYSM OF THE ULNAR ARTERY.—OPERATION.—CURE.

J. S., aged 27, was admitted on the 13th of November, under the care of Mr. Liston. He is a publican. About a month ago, as he was cleaning the window, he thrust his hand through the square of glass, and received a small wound of the left arm, over the ulnar artery. He was taken to a surgeon and lost about three pints of blood, when the hæmorrhage was stopped by compression. The external wound healed, but shortly afterwards a small pulsating tumour formed in the situation of the wound; this tumour increased in size. Pressure was applied for some weeks, and at first appeared to succeed, but after about three weeks a small slough formed in the skin. Mr. Liston, therefore, determined upon tying both the divided ends of the artery.

On the 16th the operation was performed. An incision, four inches in length, was made over the situation of the tumour, cutting at once into the sac. This was found filled with a quantity of firmly coagulated blood. The artery was then sought for above and below, and, owing to the condensation of the tissues in the neighbourhood of the vessel, some difficulty was experienced in finding it. A ligature was finally placed round the vessel, both above and below. Lint dipped in cold water applied. A small arterial branch bled afterwards, and required the application of a ligature. The wound was brought together by three sutures and isinglass plaister.

17. The wound is healing; pulse 90; bowels confined; no fever; no hæmorrhage. To have an aperient draught.

18. Going on well; sutures removed.

27. The wound is rapidly healing.

Dec. 3. Discharged cured.

Mr. Liston remarked on this case, that, occasionally, small false aneurysms could be cured by methodical and well-applied pressure; very often, however, the practitioner was disappointed in his expectations from this proceeding. If the coverings began to slough, the pressure could not be proceeded with, and there was great risk of troublesome hæmorrhage taking place on the separation of the dead parts. Then the only safe practice was, to cut into the sac, to perform, in fact, the old operation for aneurysm, and tie the vessel above and below where it had been injured. This he had been obliged to do, under similar circumstances, in aneurysm both of the radial and ulnar, and also of the humeral arteries.

ANEURYSM BY ANASTAMOSIS.—TREATMENT AND CURE BY INCISION AND LIGATURE.

J. N., aged 4 years, was admitted on the 18th of October, under the care of Mr. Liston. Two days after he was born, his mother observed a small tumour situated near the anus; this gradually increased in size. It had been vaccinated once without effect; it had also bled once.

At present he has a large prominent tumour, about the size of an orange, on the right side of the perinæum, extending from the anus to the scrotum. The surface of the tumour has a purplish hue. Mr. Liston determined to tie the tumour in the manner which he has practised so frequently in this hospital. The operation was performed on the 15th in the following manner:—An incision was made in the mesial line of the perinæum, and then carried round the tumour; the integument was dissected a little back from the swelling. A needle was then passed under the tumour unarmed, and an armed needle was then passed in the opposite direction; a double ligature was pulled through by each of the needles. The tumour was then tied in from separate angles.

16. There has been some little fever and hæmorrhage. To have a purgative of calomel and jalap directly.

19. The tumour is nearly separated; the little patient is quite well in health; bowels open.

22. During the night the slough quite separated. The wound to be dressed with water dressing. The child's general health is good; his bowels continue open.

28. The wound is granulating freely, and healing; there is a suspicious point on one side, which appears as if a small part of the disease was still left. Red wash to be applied.

Nov. 2. The wound is contracting, and his health is good.

3. There is some swelling of the scrotum

and fever; the child has been walking about, and has perhaps irritated the parts; pulse 150; bowels open; skin hot; some thirst. To have a purgative of jalap and calomel.

Vespere.—Bowels open freely; much less fever.

5. The œdema of the scrotum has much diminished, but the penis is considerably swollen; there is some redness about the wound. His bowels have been freely opened from the powder last night. Less fever and thirst.

5. The penis is much enlarged, and is very œdematous; some punctures were made in it. There is less redness about the wound, but there is still some heat of skin and cough; pulse quick; tongue coated.

11. The swelling of the penis is quite gone; the wound is healing rapidly; no fever left; bowels open.

16. The wound is contracting and healing rapidly; some alarm had been felt less a part of the disease still remained, as some of the granulations on the right side had a too florid and luxuriant appearance.

20. The granulations now appear perfectly healthy; the wound has almost entirely healed, but his mother was anxious to take him into the country, and in this state he was discharged, cured.

We have, on former occasions, reported the clinical observations of Mr. Liston on several of the cases of aneurysm by anastomosis which have been cured by a similar operation to that practised in the above instance. Some of the most formidable vascular tumours of this description have been thus removed, some of them of such a magnitude, that it is probable no other kind of operation would have succeeded in effecting a cure. The operation, though apparently formidable, has, as yet, in the cases occurring in this hospital, been attended by no severe constitutional irritation, while its success has been uniform.

ST. THOMAS'S HOSPITAL.

BRUIT DE DIABLE INDEPENDENT OF ANÆMIA.

Henry Head, an athletic man, age 32, formerly in the Life Guards, latterly in the police force, was admitted October 12, under the care of Dr. Lister, with palpitation, dyspnœa, and the usual symptoms of obstructed circulation.

About eight years ago had an attack of rheumatism; never remembers to have suffered from palpitation before, but noticed it soon afterwards. Cannot give any account of symptoms resembling those of acute pericarditis during the rheumatic attack. Did his duty as a policeman till a fortnight before admission.

The physical signs indicated a state of hypertrophy of the heart with dilatation, but the principal point of interest was a loud bruit, resembling the low note of a blacksmith's bellows, in the anterior inferior triangles of the neck. It was louder on the right side than on the left, but this was afterwards found to vary occasionally. The sound was prolonged, and, if anything, was a little louder at a period corresponding to the systole of the ventricle. It was much increased by strong pressure with the stethoscope, and was not diminished by strongly pressing the upper edge of the stethoscope only. But on pressing with the forefinger very strongly over the internal jugular vein, it was almost abolished. It is louder on taking a deep inspiration, weaker in expiration.

These circumstances are sufficient to show that the seat of this murmur is in the veins, and not in the arteries, as was first noticed by Dr. Ogier Ward, of Shrewsbury. But as there are signs which render the existence of dilatation of the aorta very probable, it is perhaps complicated with the arterial bruit. Bouillaud says this sound almost, if not invariably, arises from anœmia. Dr. Hope says he has never found it to exist in any marked degree where anœmia was absent, and that it disappeared when the anœmic state, of which it is a valuable indication, was removed by iron, aloetic remedies, animal food, and fresh air.

Now, in this case, the bruit and accompanying fremissement have been permanent during his stay in the house. He was discharged, much relieved, Dec. 14. The remedies employed were, cupping and leeches; counter irritation by means of croton oil; blue pill, squill, and Dover's powder at night; and, latterly, a draught three times a day, with fifteen minims of vinum colchici, fifteen of vinum antim. tart., and twelve of tincture of digitalis.

EQUALITY OF RIGHTS IN ALL CLASSES.

To the Editor of THE LANCET.

SIR:—We learn, from the public prints, that Mr. Poulett Thomson has arrived at his destination—the capital of Upper Canada.

Amongst the first acts of the new Governor, was that of receiving an Address from the Mayor, Aldermen, and Commonalty. It mentioned the following gratuitous hints on one principal subject of legislation:—

"Having understood, that one of the objects of your Excellency's visit to this province, and of your assuming the government thereof, is to ascertain the state of public opinion upon the question of the proposed legislative Union of the provinces of Upper and Lower Canada, we beg to express our conviction, that *any legislative Union*, which shall not be predicated *upon the* ASCENDANCY *of the* LOYAL *part of the inhabitants*, or which shall give to that por-

tion of the population, who, from *education, habits, and prejudices*, are ALIEN to our nation and our institutions, and to that part of it, more particularly, which has been engaged in *open rebellion or treasonable conspiracy* against the Government, *the same rights and privileges* with the loyal British population of the provinces, who have adhered so zealously and faithfully, at the risk of their lives and property, to their sovereign and constitution, would be fatal to the connection of these provinces with the parent country."

To this part of the Address his Excellency the Governor replied in the following terms of exalted liberality :—

"That measure is recommended by her Majesty's Government, from a deep conviction, that it will cement this connection between these colonies and the parent state, which it is the firm determination of her Majesty to maintain inviolate. BUT, TO BE OF PERMANENT ADVANTAGE, IT (the Union) MUST BE FOUNDED UPON PRINCIPLES OF EQUAL JUSTICE TO ALL HER SUBJECTS."

I would, Mr. Editor, that you could transfer these words to your widely diffused pages in letters of gold!

But I trust her Majesty's Government will not fail to legislate upon principles equally liberal, equally just, towards her subjects at home, and that the time is at length come, when the UNION of the hitherto disjointed Members of the Medical Profession will be effected upon the same equitable basis. Let it be remembered, that—

"*To be of permanent advantage, this union must be founded upon equal justice to all.*"

The Mayor, the Aldermen, and Commonalty of our medical Toronto, may urge upon the legislature, that "every union which shall not be predicated upon the ascendancy of the loyal part of the inhabitants," will be "fatal"—that certain amongst them are, "from education, habits, and prejudices, ALIEN to our institutions,"—nay, that they have been engaged in "open rebellion and treasonable conspiracy!" But I trust that the Government which sent out a POULETT THOMSON, to check the bigotry and the insolence of the "LOYAL part" of the inhabitants of Toronto, will not do less than legislate "upon principles of equal justice to all" at home.

"Alien!" *Is not* the licentiate an "alien" at the College of Physicians? Is not the general practitioner an "alien" amongst his fellow Fellows of the College of Surgeons? *Do we* find "equal justice to all" here?

"Open rebellion"—"treasonable conspiracy!" Is it wonderful, if men of education, feeling themselves to be aliens where they should enjoy citizenship, should nobly contend for "equal justice?"

Consider, Sir, the conduct of the "Mayor, Aldermen, and Commonalty" of Pall-mall East. A gentleman, who shall have taken the very first degree in *medicine*, at the University of Edinburgh, and, *therefore*, shall be *alien* "in education, habits, and prejudices," comes to London, is compelled to undergo an examination, and to pay a considerable admission-fee (I believe 60 guineas); he is then turned adrift, without the right of passing the threshhold of the building, of participating in the government of its affairs, of taking down a book from the library shelves, of examining the diagrams of Harvey, or the preparations of Baillie! Nor is this all. This same individual is annually insulted by an *invitation* to lectures and soirées, where he ought to enjoy, in "equal justice," *equal rights!* He is branded by a different designation; he is kept out of the principal hospitals and government appointments; he *is*, in a word, an "ALIEN," *driven* to open "rebellion!"

Shall these things be? No! If right be might, these things shall *not* be. We will be content with nothing less, and I trust our Government will confer nothing less, than

"EQUAL JUSTICE TO ALL."

I am, Sir, your obedient servant,

AN ALIEN IN EDUCATION, HABITS, AND PREJUDICES.

London, Dec. 30, 1839.

P.S.—I am rejoiced to see the continued activity and widely-spreading influence of the British Medical Association, our HOPE, which, I think, I have provided with a *motto*, as imperishable as, I trust, its own work will be.

PETITION FROM GLOUCESTER ON REMUNERATION OF UNION MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR:—I beg the favour of your inserting in the next LANCET the inclosed copy of a Petition to Parliament, which has just been adopted by the Medical Society of Gloucester, and signed by almost all the resident practitioners.

The length of this petition may appear to some objectionable, but our reasons for entering so far into details were these: 1st, After the many protracted discussions on this subject which have found their way into the medical journals, or the transactions of associations, and the vast amount of valuable information which has been obtained *especially by the late Parliamentary Committee*, it might reasonably be expected, that we should be fully prepared to state the *full extent* of our requirements, and particularly as to the *amount* of remuneration; 2ndly, No one had before shown how the *maximum* and *minimum* rate (recommended by Serjeant Talfourd

and others) might be adapted to districts of *different* extent, without infringing the principle of the regulation proposed in June last by the Poor-Law Commissioners,—we have endeavoured to supply this desideratum in the present petition.

The qualification clause has proved the most difficult to determine. Without specifying the bodies, corporate or collegiate, who might confer the preliminary qualification (for in the present inefficient condition of these bodies it would be useless to name them), we thought it sufficient to require a practical examination in all the branches of the art.

It was originally intended that the latter part of this clause should read as follows:—(After the word "office") "by *having practiced for three years*, after passing examinations in medicine, surgery, and midwifery; or unless he were engaged in practice *before* the enactment of the new Poor Law." Thus not only proposing as a future qualification a certain term for the practical application of professional studies, but also disqualifying some very unfit persons who have been admitted into these situations since the passing of the Poor-Law Amendment Act. However, this was strongly objected to by a highly respectable member of the Society, and the majority gave way.

I feel, nevertheless, bound to recommend in other petitions the insertion of the original clause; at all events, the qualification of *three years practice*, possessing, as I do, unquestionable evidence, of most lamentable consequences to the health and lives of the paupers, from the appointment to extensive districts of young men who had only just obtained their licence from Blackfriars.

We have not yet decided to whom to entrust this petition, and another for the House of Lords, but it is our intention to ask for the support of the county and city members, as well as other M.P.s within reach. If similar applications be made extensively, the Profession will secure *decent* attention to their cause in the House.

May I hope, Sir, that in your senatorial capacity you will augment the debt of gratitude which we so justly owe you for your past exertions in this cause, by co-operating with Mr. Serjeant Talfourd in procuring some legislative amendment during the next session.

Medical men throughout the country should not only at once send similar petitions, but should transmit to one of our parliamentary advocates any facts illustrating the ill-working of the present system *since the Report of the Parliamentary Committee last year*. I am, Sir, your obedient servant,

W. H. Rumsey.

Gloucester, Dec. 16, 1839.

P.S. Since the petition was drawn up, I have been informed that the following scale of limitation, to the extent of medical districts, would be better adapted to the varying circumstances of Unions, than that proposed in the petition. No district to exceed 16 square miles in area; nor, if containing more than 4000 inhabitants, to exceed 9 square miles; nor, if containing more than 5000 inhabitants, to exceed 4 square miles; nor, if containing from 7000 to 10,000 inhabitants, to exceed 1 square mile. The scale of remuneration to be altered accordingly, the *minimum* rate per case on which the fixed salary is calculated, being 8*s*., 7*s*., 6*s*., and 5*s*., in the four classes of districts respectively.

(Copy.)

TO THE HONOURABLE THE COMMONS, &c. &c.

The humble Petition of the Medical and Surgical Practitioners of the City of Gloucester,

Sheweth,—

That your Petitioners have long observed, with deep concern and regret, the imperfect legal provision of medical attendance for the poor; and though fully aware that great defects in the administration of this branch of relief existed before the passing of the Poor-Law Amendment Act, and that in some particulars an improvement has been effected by the Poor-Law Commissioners; they are, nevertheless, firmly convinced, that the serious evils which still exist (some originating in the former system, others produced or aggravated by the present), can only be effectually removed by the intervention of the Legislature.

Your Petitioners, therefore, pray that your Honourable House will be pleased to take into consideration the measures which they now humbly propose, and which are in accordance with the unanimous testimony of the medical witnesses examined in 1838, by a Committee of your Honourable House.

First.—That a physician or surgeon of not less than five years standing, and practically conversant with the wants, habits, and diseases of the poor, in the rural as well as in the urban population of this country, may be appointed (under an Act of Parliament) as an additional Commissioner, to act in concurrence with the Poor-Law Commissioners, in the decision of all questions relating to the medical relief of the poor.

Secondly.—That certain limits, to the extent and population of medical districts, be determined by Parliament.

And your Petitioners beg leave to suggest, that no district should be permitted to exceed 16 square miles in area; nor, if it contain more than 4000 inhabitants, should it exceed 4 square miles in area; nor, if it contain more than 6000 or 7000 inhabitants, should it exceed 1 square mile in area; nor should any district be permitted to contain more than 10,000 inhabitants;

That no medical officer be allowed to appoint a substitute or deputy for any portion of his district, except under temporary inability from ill health, or other sufficient cause; and in the event of such inability the substitute should possess the full qualification required of medical officers of Unions, and be approved by the Board of Guardians.

Thirdly.—That a maximum and minimum rate of payment to the medical attendants of districts, be established by law; thus protecting on the one hand the rate payers, and on the other the medical profession; thus, also allowing the Board of Guardians of such Union to determine the exact rate of remuneration within the prescribed limits, according to the custom and peculiar circumstances of the locality, and subject to the final decision of the Poor-Law Commissioners in case of dispute.

Your Petitioners observed, with much gratification, the improved spirit of a minute of the Poor-Law Commissioners, dated June 6th, 1839, in which it is proposed:—

"That at the commencement of every parochial year a list of all the paupers, in the receipt of relief within a district, should be made out; and that for the medical care of the paupers, a fixed sum to be then determined, should be paid, which should be apportioned to the several parishes of the district, according to the number of the paupers on the list belonging to such parishes respectively, and that the medical officer should attend these paupers when sick, without any specific order from the Union or parish officers."

"That the (said) fixed sum (or salary) should be such as to afford a payment of six shillings or six shillings and six pence per case, on the average number of *bona fide* cases, subject to be augmented if the districts be extensive."

In order to apply the principle of a *maximum* and *minimum* rate to the foregoing proposition of the Poor-Law Commissioners, your Petitioners believe, that in districts not exceeding one square mile in area, the minimum rate per case, as regards the "Pauper List," should be about five shillings, and the maximum about six shillings and six pence; that in districts not exceeding four square miles in area the minimum rate should be about six shillings and six pence, the maximum about eight shillings; that in districts not exceeding sixteen square miles in area, the minimum should be about eight shillings, the maximum about twelve shillings. The Poor-Law Commissioners further state, in the said minute, "that as respects all other persons (not on the Pauper List), to whom medical relief shall be ordered during the current parochial year, the Medical Officers shall receive a fixed sum per case," * * * * * * which (the Commissioners admit) "may reasonably be in somewhat a higher scale." And your Petitioners believe, that a minimum rate of eight shillings and a maximum of twelve shillings would meet these cases under the various circumstances before specified.

Your Petitioners also fully concur with the Poor-Law Commissioners in the opinion, "that surgical operations of a serious character should be paid for by a separate fixed charge for each case."

Your Petitioners also beg to represent the importance of permitting every Medical Officer (on his responsibility to the Medical Commissioner), to call in a consulting practitioner in cases of difficulty and danger, due provision being made for his remuneration. And farther, the urgent necessity for providing (by law) additional medical attendance in the event of epidemics seriously and extensively prevailing.

Fourthly.—With respect to the qualification of Medical Officers.

That no one be eligible to a future appointment, unless he shall have proved his competency to execute the multifarious duties, and to meet the important emergencies of the office, by having passed examinations, in medicine, surgery, and midwifery; or unless he be at the present time legally qualified to practice his profession.

Your Petitioners firmly believe, that the preceding propositions are well calculated to secure an efficient superintendence of the medical department of the Poor-Law, and an adequate supply of medical attendance and medicines to the sick poor.

And your Petitioners will ever pray.

TRANSMISSION OF VACCINE LYMPH BY THE PENNY POST.

To the Editor of THE LANCET.

SIR:—An official notification having appeared, that from and after the 10th of January, the Penny-postage system is to come into operation, I crave a small space in your valuable Journal, that I may inform your country readers that all applications for Vaccine Lymph, addressed after that day to the resident Surgeon at the Small Pox Hospital, London, shall receive the earliest possible attention.

The effect of this new system of postage, in bringing to the door of every medical man throughout the country a supply of Vaccine Lymph, *from various sources*, at the small charge of one penny, cannot but have a most remarkable effect upon the practice of Vaccination. I stated this very strongly to the Committee of the House of Commons, appointed to investigate the Post-Office Question, and I now confidently look forward to the most favourable results. I am, Sir, your obedient Servant,

GEORGE GREGORY.

31, Weymouth-street,
Dec. 28, 1839.

FOREIGN HOSPITAL PRACTICE.

JULIS LEBRET, æt. 23, a slater, was admitted into the hospital of La Charité, under the care of M. Velpeau, on the 3rd of September, 1839, on account of injuries he had sustained in consequence of having fallen from the roof of a house, six stories in height, upon which he had been at work a short time previously.

On examination, after admission into the hospital, no injury of the head was detected, nor any fracture or dislocation of the limb; but there is loss of sensation, and power of motion of the inferior extremities, with an inability to raise the left forearm and hand. He possesses, however, sensation in the whole of both arms, and all over the chest; and is able to move (but without any strength to grasp) the fingers of both hands. A slight degree of priapism is also observable.

Sept. 4. Has passed a disturbed night, suffering from a wild form of delirium. The bladder is paralysed, and the urine is drawn off by the catheter. Complains of much thirst; tongue is dry, and red at the tip; pulse is 70 in the minute, and is rather full. He has recovered perfect sensibility throughout the whole surface of the superior extremities. Venesection to ℥ xii. The urine is to be drawn off twice or three times a-day by the catheter.

5. Remains in much the same state as yesterday; pulse is 60; the tongue is dry, and encrusted with a harsh covering; the blood drawn yesterday is neither buffed nor cupped.

7. The tongue is more dry, more furred, and browner than before; cold clammy perspiration upon face; slight dilirium at night; the pulse remains at 60.

8. Delirium at night as before; suffers at times from difficulty of breathing; the stools pass involuntarily, while the use of the catheter is still necessary for the abstraction of the urine; tongue is dry, and there is a dark brown crust in its centre.

9. The difficulty of respiration is more frequent in its occurrence, and endures longer than before; the other symptoms remain the same, with the exception of the pulse, which is only 48 in the minute.

10. Died to-day, seven days from the time of the occurrence of the accident.

Post-mortem.—On examination after death, the body of the sixth cervical vertebra was broken across, as was also that of the seventh dorsal. The spinal chord, in the lower part of the cervical region, and opposite to the fracture of the sixth cervical vertebra, was slightly swollen, presenting a tumified appearance, and when cut into, by a longitudinal incision, its medullary texture was found to be softened, and discoloured with extravasated blood, which was apparently commencing to be transformed into pus.

THE ANTI-MEDICAL REFORM C[illegible]—which has been projected in DUBLIN, wi[illegible] succeed. It is a fraudulent, despicable, and, withal, a contemptible effort to perpetuate a system of rank imposture and knavery in medical affairs. Why was Dr. MARSH made Sir Henry? Let him be content with his baronetcy, and not add to it the despicable title of "APOSTATE." As for Dr. KIRBY, surely he is old enough, if he be not wise enough, to know better than to aid the discreditable league. But we say to them all, BEWARE! If the scheme be persisted in, assuredly as they now exist, THE LANCET shall be applied to their iniquities, and they shall walk henceforth as unskinned men through the streets of Dublin.

MR. JERRARD'S REVOLUBLE BED.

To the Editor of THE LANCET.

SIR:—Observing on the cover of THE LANCET, for the 12th of October last, an advertisement, headed "Knox's Revolving Invalid Bed," I am induced to request the favour of your inserting this communication; and am inclined to hope for your compliance therewith, since it is well known to you, that the "Revoluble Invalid Bed" (of which the above, in its most essential point, namely *turning*, is a copy) was invented by me so long ago as the year 1819, and announced in THE LANCET for the 19th of July 1828. In May 1831, I sent a model of it to the Society of Arts (where it may now be seen), and the Society awarded me their large silver medal for the invention. At the time I invented and published the method which is adapted for *turning the patient on either side*, no such contrivance was to be found either in this or any of the neighbouring continental countries, repeated inquiries having been instituted for the purpose of ascertaining if such a principle had been discovered by any one else, but none could be found. I claim the invention exclusively as my own, and remain, Sir, your obedient servant and constant reader,

J. C. JERRARD.

Honiton, Dec. 23, 1839.

*** Although we insert this letter, we must notify our objection to give place to any controversial communications on the subject, excepting as advertisements on the cover.

TO CORRESPONDENTS.

Tyro.—We can safely recommend the recent work of Dr. Willis.

Advice Gratis is capable of exercising his pen on worthier objects than the Dubs at St. George's.